# LAND USE POLICY: A POSITIVE APPROACH

WORKING DOCUMENTS OF THE LAND USE POLICY TASK FORCE

# LAND USE POLICY: A POSITIVE APPROACH

Working Documents of the
Land Use Policy Task Force

Prepared by

THE LAND USE POLICY TASK FORCE 1982

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# WORKING DOCUMENTS OF THE LAND USE POLICY TASK FORCE

## INTRODUCTION:

The Report of the Land Use Policy Task Force - "Land Use Policy: A Positive Approach" is a synthesis of a vast amount of information and opinion. The Task Force decided to keep the report as short and clear as possible and provide this separate volume of references and supporting material.

Most of the material reviewed by the Task Force is referenced or reproduced in a condensed format here. There are also some sections from the first working report of the Task Force.

The most astonishing aspect of this study has been the lack of specific information on some aspects of the government's land related programmes.

Much of the information we received was quite general. Specific information on some aspects of land related programmes is scarce and the Task Force had to rely heavily on the advice and opinion of the Departmental representatives and other contributors to our work.

Among the many who have helped us with enthusiasm and advice, we are particularly grateful to the following:

| | |
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# APPENDIX A

## LAND USE OVERVIEW

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# APPENDIX A

## CONFLICTS IN LAND USE

(From the First Review of the Task Force, Dec. 1981)

When a landowner, whether Government, Corporation or individual, does something on his land or uses his land in a way that adversely affects other people, the result is a Land Use Conflict.

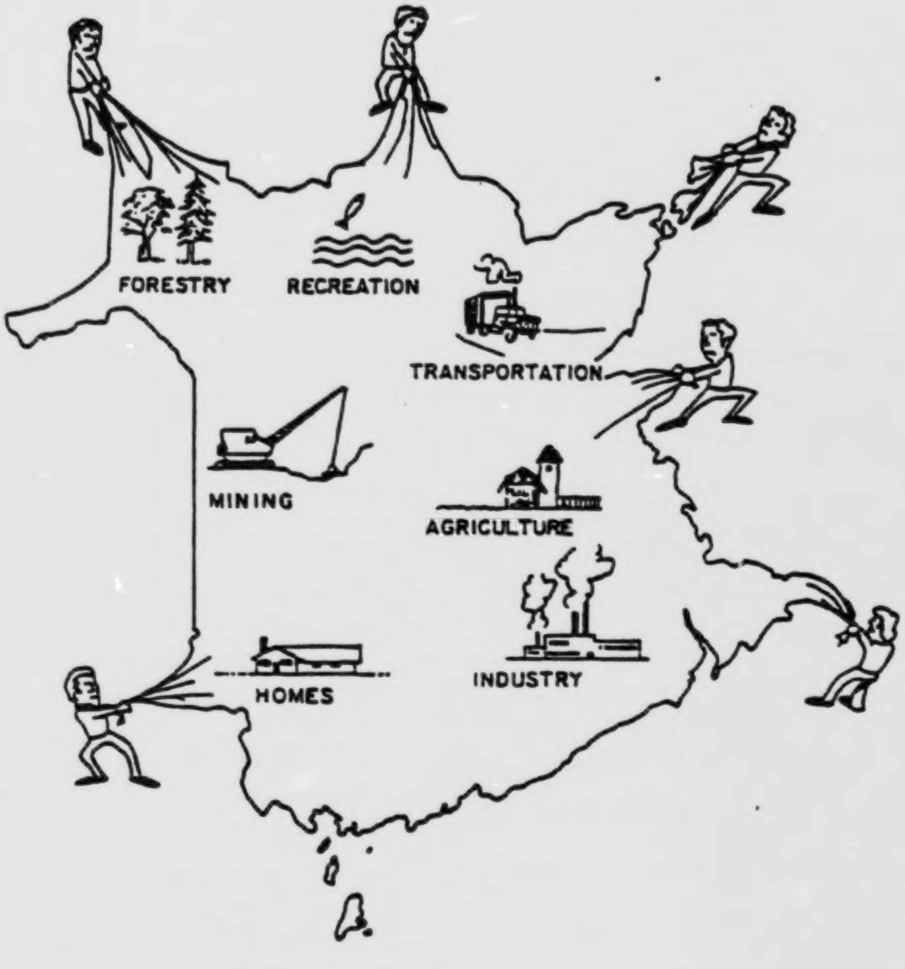
As the demand for land and the products from land increases, conflicts are becoming more frequent and more complex. In the past these conflicts have been resolved on an individual basis but we have now reached the point where it becomes very difficult and expensive to solve individual conflicts without creating others.

At this stage it is necessary to try to prevent the conflicts from developing. It is apparent that resolving issues such as waste disposal becomes too expensive, politically, socially and economically, once the issue is allowed to reach conflict proportions.

In New Brunswick, some of the factors leading to conflict are already established. Land ownership patterns for instance, may restrict productive use of land. The forester wants to spray to protect his trees from insects but is restrained by the residents and by the blueberry farmer who needs insects to pollinate his bushes. This increases the costs of forestry and agriculture production and is a source of contention with the resident. Land ownership patterns are long lasting and slow to change.

Other conflicts develop relatively rapidly as the result of a combination of factors. The 'urbanization'

# DEMANDS FOR LAND USE ARE INCREASING IN INTENSITY AND IN KIND


FORESTRY
RECREATION
TRANSPORTATION
MINING
AGRICULTURE
INDUSTRY
HOMES

of rural land results from a combination of individuals' wishes, relatively low land values and the fact that some government programs inadvertently encourage such development. For example, once housing is built along a farm boundary, the farmer then becomes constrained by regulation from certain farming activities.

Some factors don't create conflict but do hinder their prevention. The difficulty of obtaining rural representation in regional planning is an example. There is general agreement that such planning must come from the people but a mechanism is required to help bring it about. Without this, the conflicts develop and increase in complexity.

Another major factor is the recently developed public perception of what they expect the Government to do for them if problems arise. For example, there is general expectation that the Government will continue to pay compensation for repeated flood damage or will prevent farmers from spreading manure because of the new subdivision on the next property.

Land use conflicts are increasing and becoming more complex because we must make greater demands on our land to continue to prosper. We are also realizing that the land resources must be more efficiently managed. We recognize that the fish in the forest stream is important, as is the tree and the water itself. Our perceptions of how to manage our resources are changing rapidly. Concern for a comprehensive approach to the land resources is rising all across Canada at this time.

This has come about because of the increasing complexity of the conflicts and the near-impossibility of resolving them once they are seriously developed. A coordinated approach to land, necessary to prevent conflicts developing, can provide significantly increased economic and social benefits as well.

Three major factors are forcing themselves on our attention:

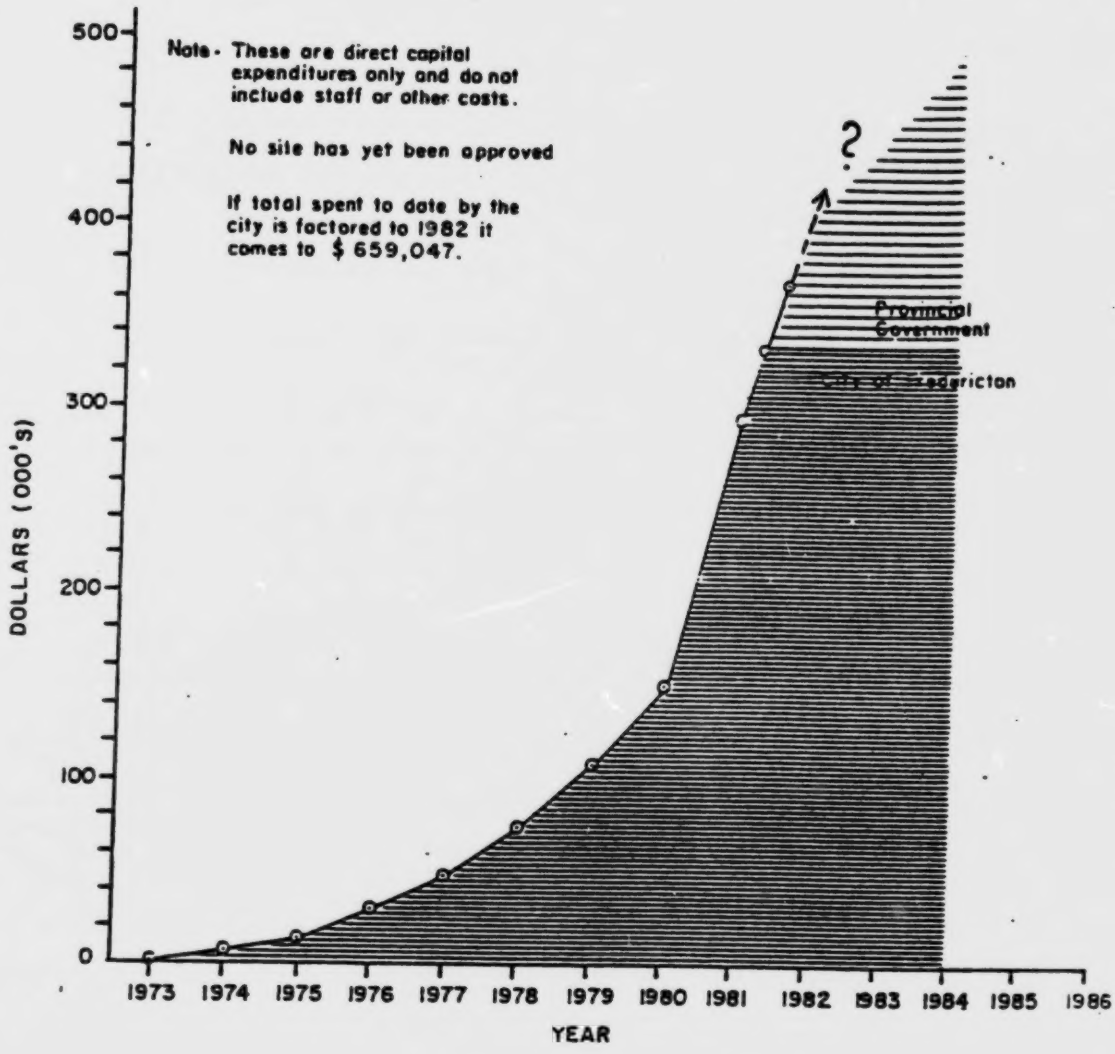
1. That conflicts in land use have reached the stage where we must take a coordinated approach, so as to avoid the conflicts and decide what we want to do with our land.

2. That the historic exploitation of our land resources, although seen as economical at the time, is now seen to have been costly.

3. That management of our land resources for increased productivity is necessary for our future wealth.

# SEARCH FOR A LANDFILL SITE
## City of Fredericton

## COST



Note - These are direct capital expenditures only and do not include staff or other costs.

No site has yet been approved

If total spent to date by the city is factored to 1982 it comes to $ 659,047.

## OUR PRESENT PRACTICE

The major landowner in the Province is the Government with some 44% of the total. Large freeholders own 16% and the rest is owned by a multitude of freeholders in relatively small lots (36%),or is water (4%). Some of the Government's holdings are in small lots and many small freehold lots are isolated in the middle of large blocks of Crown Land.

Historically, land was granted under the Homesteading Programs to those who would clear and work the land. Unfortunately, there was little systematic development and as a result, isolated parcels of cleared or once-cleared land remain scattered across the Province. Much of this land is more suitable for woodland than agriculture, and its continued existance hinders woodland management. On the other hand, much of the best agricultural land is in woodland or urban use.

There is much land in the Province that could be very much more productive than it is now, but at a Provincial scale, we do not know accurately where this land is or how much there is. This is because there is no consolidated land use inventory of the Province. Those that have been done for forestry or agriculture are not compatable in that different classifications may be applied to the same land use and there is some need for distinguishing between land capability and land use. Despite these difficulties, local knowledge and past studies confirm that there is much land that is under-utilized within existing market potential.

While the actual use of the land is not accurately defined, nor the productivity assessed, the capability of the land has been evaluated, but only in the broadest terms and to the satisfaction of few. However, at a Provincial scale, the Canada Land Inventory did indicate the presence of some 1.6 million acres of agricultural land and productive woodland was assessed at 13.5 million acres. In fact, good quality agricultural land in suitable blocks covers about 3.7 million acres with at least 2 million acres of that in forest.

Using the Canada Land Inventory data, an Indicative Land Use Plan for the Province was prepared in 1972 by the Department of Regional Economic Expansion at a scale of 1:250,000 as a demonstration of the kind of approach that could be adopted.

Over the past half century there has been a major reduction in the amount of land being farmed and as a result, much of the once-cleared land has been reverting to woodland. In the last few years, however, the trend has been halted and land is once again being cleared in some regions while still reverting in others.

Changes in forest management practice are also underway as the need for growing a more controlled forest is recognized and steps taken to bring this about over the next several decades. This review of forestry practice shows that with proper management in the future, current industry levels could be maintained with less land in trees, providing an opportunity to expand either agricultural or forestry production.

Future trends depend very much on the market conditions that develop. At present, agriculture occupies a small percentage of the potential land but if predictions of major changes in the food market are correct there could be an impact on New Brunswick farmland within a decade.

The Government has no written comprehensive policy on land use, but it does have policies that affect land use and it does carry out many programs which affect and to some extent control land use.

These government measures cover a wide range of approaches, from the expropriation of land for a specific use to allowing free market forces to determine land use. Between these two extremes lie a range of programs including advisory and extension services; programs offering incentives, loans, grants and tax rebates; assessment programs which establish land values and collect taxes or set rent rates accordingly; legislation and regulatory programs constraining certain activities and, sometimes, encouraging others; demonstration projects carried out directly by Government and Government development projects such as highways, infrastructure and utility corridors.

Clearly, there is a wide range of approach to matters affecting land use. As a result, the need has developed for more coordinating mechanisms such as interdepartmental committees; for more sophisticated, and costly project evaluation; for more extensive enforcement of legislation and, inevitably, for more legislation.

In order to resolve these matters, the Community Planning Act was passed to develop among other things, plans at various levels of detail across the Province. The experience has been, however, that within the present system of rural representation and government organization, regional planning is difficult to carry out appropriately. Municipal planning is, however, continuing actively and some area plans are being prepared. Never-the-less, for overall resource management a Province-wide perspective and policy is required.

The increasing complexity of the Province's resource development and economic needs has led to the preparation of a number of major reports over the past decade. Reports on the Forest Resource, the Agricultural Resource and the Saint John River Basin Water Resource have been followed by others on Wetland, Peat Bogs, Energy and Mineral resources. Other aspects of Land Use have been covered in the reports on Non-Incorporated Areas in N.B.; in the Report of the Select Committee of the Legislature on Rural Life and Land Use in 1977 and in recent reports on Urban Sprawl and control of access to limited access highways.

These reports have been prepared by elected representatives, by civil servants and by consultants. All of them deal with matters affecting Land and all of them have made recommendations on Land Use which have been considered in preparation of this report. Full references are listed in Appendix B and the principal recommendations are reproduced in Appendix B.

The overwhelming consensus of these reports is:

1. The key to better land management in New Brunswick is that a Provincial Land Use Policy be developed by the Government; and

2. That some kind of central coordinating mechanism be established to review the effects of government programs affecting land use and to recommend where improvements or simplifications could be made.

There are great inherent difficulties in taking an overall look at Land Use because it encompasses so many activities in so many diverse areas. Unfortunately, talk of land use tends to trigger reactions in most people because everyone is affected and there is a general perception that any consideration of land use is threatening. However, as has been shown, the Government is already exercising very strong control of land use practice in some areas.

While these activities of Government are already somewhat threatening to the public, the results of the Government's non-involvement in other areas are also threatening. Many farmers, for example, are considerably concerned about foreigners purchasing land, particularly for speculative purposes, and are also concerned about large corporate purchasers even where farming is the desired end.

The problem facing the Government now is how to relate the various existing programs to a coherent Land Use Policy in order to avoid the conflicts that are developing and to grasp the opportunities that are available if we coordinate what we do with our land.

## THE TASK

### The Goal

Conflicts among land users and those that arise inadvertently from government programs are the symptoms of the need for a coordinated approach to our land. To bring this about a policy is needed but before developing an appropriate policy and studying all of its implications it is necessary to define the objective or goal of the policy. In light of this goal, the conflicts and issues can be examined and a policy developed which comes closest to meeting the goal.

This goal might be a quite limited one such as to resolve inter-agency conflicts, or it may be to reduce economic or environmental problems. A more ambitious goal might be to produce maximum social and economic benefits from the land.

After some consideration, the Task Force strongly favoured the last of these. The group believes strongly that the Province is defined by its land and that the wealth of the Province ultimately depends on us obtaining maximum benefit from our land. When the Deputies' Committee also agreed with this general approach, a more specific version was prepared and used as a point of reference for subsequent work. This reads as follows.

THE LAND RESOURCES OF NEW BRUNSWICK SHOULD BE USED TO PROVIDE THE MAXIMUM SOCIAL AND ECONOMIC BENEFITS TO THE PEOPLE OF NEW BRUNSWICK ON A CONTINUING BASIS.

## The Issues:

As a result of the research carried out by the Task Force, discussions held with senior officials and representatives of some outside agencies, a number of 'Issues' were identified for close study. These are consolidated from a long list of identified issues but they are not totally "rationalised" in that there are overlaps and differences of character among them. Conflicts of various kinds are inherent in all of them.

They are as follows:

URBAN SPRAWL
LAND OWNERSHIP
LAND VALUES
UNDER-PRODUCTIVE LAND
INFORMATION
LAND USE PLANNING
REGULATION
INFRASTRUCTURE
PERCEPTIONS
COST

Most of these issues are familiar to senior managers but often for different reasons or from different points of view. Appendix A outlines in more detail what is included under these headings. For instance, 'Foreign ownership' is included under Land ownership along with such other issues as Corporate ownership, Land ownership patterns, isolated properties in Crown Land, Land Banking, and Land speculation. Some of these also come under other issue headings such as Land Values.

The Opportunities:

The aim of the Task Force at this stage was to determine whether resolution of these issues could be expected to produce real benefits. Each issue was considered with a view to identifying opportunities. These are broadly definable as areas where action of some kind could be taken to improve an existing situation and where an identifiable economic or social benefit would result. Wherever possible, dollars and jobs were in mind, but some more indirect or longer term benefits were also considered important.

The thirty-eight opportunities that were readily identified were more than enough in our view to warrant further detailed work. They are laid out in Appendix B and described in some detail there. In the time available, we have only been able to identify them. We plan to analyse them in detail during the preparation of the proposed policy. No doubt some will drop from favour, but we expect others will appear from further studies. The most significant aspect of these opportunities is that many of them can be brought about by Government without major expenditures.

In summary, there are the following clear opportunity areas:

- -TO INCREASE GROSS PROVINCIAL PRODUCT AND REVENUE
- -TO IMPROVE THE EFFECTIVENESS OF SPENDING PROGRAMS
- -TO PROTECT INVESTMENTS ALREADY MADE
- -TO REDUCE FUTURE EXPENDITURES
- -TO ENCOURAGE APPROPRIATE DEVELOPMENT
- -TO IMPROVE DECISION MAKING
- -TO PREVENT LAND USE CONFLICTS
- -TO PROTECT RESOURCE LAND
- -TO PLAY A LARGER (OR LESSER) ROLE IN THE LAND MARKET
- -TO ENCOURAGE SMALL LAND BASED DEVELOPMENTS AS WELL AS LARGE
- -TO INVEST IN MANAGEMENT FOR RENEWED PROSPERITY
- -TO STOP EXPLOITATION AND WASTE OF OUR RESOURCES
- -TO INCREASE RECOGNITION THAT THE PRODUCTIVITY OF OUR LAND IS CRITICAL

It is understood that not all of these opportunity areas may be regarded as desirable, and some may be taken advantage of in different ways. There are side-effects with them all, some more than others, but there is no question that the opportunities are there to help achieve the established goal.

# APPENDIX B

# APPENDIX B

## LAND USE ISSUES AND OPPORTUNITIES

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# ISSUES AND OPPORTUNITIES

(From the First Review of the Task Force, Dec. 1981)

The group held discussions with as many people as possible within the three month time frame and read as much of the previous work as possible. We reviewed all relevant recommendations and made notes on all the ideas on Land Use that are current within the Government. These are summarized on page 3.

On the basis of this, we identified what appeared to be the predominant issues and then, as described in the report, identified potential opportunities. The issues are purposely not completely consolidated, they have different characteristics and there are overlaps between them. Some of them are not clearly definable. What is important is that they lead to opportunities. These are important because they are the basis for recommending action. The issues and opportunities are laid out from page 6.

Many opportunities are identified and discussed in general terms. Some of these opportunities, perhaps many, are already being addressed by Government programs. A few of them may be regarded as undesirable - land banking, for example. There are, however, enough of them so that we had no hesitation in recommending the next stage of our work which will include a more detailed analysis of those opportunities. Our work with Departments will indicate the scope for obtaining additional benefits in these areas and the costs that would be involved.

Statements made herein are believed to be true but not all of them have been individually checked or corroborated. They will be in the second phase.

## THE APPROACH TO LAND USE

When four professionals with different backgrounds are put together and asked to prepare a draft Land Use Policy, they first have to figure out what the Government means by Land Use and then come to some kind of mutual agreement amongst themselves.

Having reached this point they then have to satisfy themselves that there really is a reason for the Government to guide the way the Land of the Province is used.

In fact, we found a surprising amount of agreement amongst those we talked to and amongst ourselves on these issues. As a result, we arrived at the following conclusions which are the basis for the approach recommended in our report.

## 1. THE LAND IS OUR RESOURCE

The land within the geographical boundaries of New Brunswick is our one fixed, immovable and undeniable asset.

## 2. THE LAND IS THE FOUNDATION OF OUR ECONOMY

Although we've been attempting to diversify our industrial base, the exploitation of our land for agriculture, fishing, forestry and minerals and the secondary transformation of these resources is still very much the foundation of our economy. If anything should prove this contention, the fact that even in these difficult times for all economic sectors, the pulp and paper and mining companies alone have committed themselves to spend over 1 billion dollars to renovate and expand their plants or to establish new mining operations.

## 3. LAND USE IS WHAT WE'RE DOING TODAY WITH THE LAND. DECISIONS MADE TODAY WILL HAVE EITHER POSITIVE OR NEGATIVE EFFECTS IN THE FUTURE.

What we as a society decide to do with our land will determine what we'll ultimately get from it. In our early history, grants of land of 100 acres were given to settlers provided they cleared a minimum of 10 acres. The idea was to populate the Province based on self sustaining family farm operations. Two factors largely contributed to the failure of this attempt; some of the grants were on land with extremely poor agricultural capability and technology changed, making even the 100 acre parcel of the best agricultural land too small for modern agricultural practices. The government is still trying to come to grips with this by providing assistance to farmers for the purchase of land to extend their holdings and by encouraging small woodlot owners to manage their woodlots to increase provincial wood fiber production. Today, with better roads and cars, living in the countryside and working in the city has become a viable alternative for a great many. Problems arising from this sprawl development such as the location of sanitary landfill sites, the fear of problems with the groundwater supply in some of these areas, the complaints of some residents over farming practices and the inability of some farmers to expand their operations are but some of the issues that will be the land use issues of the eighties and nineties.

4. PREVENTION IS PREFERABLE AND LESS EXPENSIVE THAN CORRECTION.

When dealing with land related matters, the cheapest route, albeit more expensive at the beginning, is to prevent a problem from occurring. It is, for example, cheaper to make sure we prevent contamination of the water supply than to go in and correct the situation once it has happened. Also, it is cheaper to control the access to certain key portions of our highway system than to build a new by-pass around them.

5. INFORMATION HAS TO BE THE CORNERSTONE OF ANY LAND USE POLICY.

To properly control and get the best return from the land, we must know it. If we don't know where the minerals are, their nature and quantity, we will never mine them. If we cannot identify exactly where the best farm and recreational lands are, we will never be able to protect or adequately exploit them. We presently have more information on the provincial land base than ever before but, a commitment to fill the gaps in this knowlege and constantly update it, must be the cornerstone of any provincial land use policy.

## 6. A PROVINCIAL LAND USE POLICY

A Provincial Land Use Policy is simply a statement of provincial goals with regards to land use. This is not something new, the government through its various pieces of legislation and programs affecting land has, at the present time, an unstated policy on land use. The preparation of a Provincial Land Use Policy should be seen as the clarification of the Province's position on land use and the first step in an effort to better coordinate Provincial programs affecting land.

## 7. COORDINATION IS THE KEY.

To achieve the maximum benefits from the land and the money we spend on it, the coordination of various provincial programs with one another and a coordinated land information system are necessary. Different ways of achieving this, ranging from the creation of a super ministry of planning to a small cooperative effort were discussed. We opted for the establishment of a Land Use Secretariat because, to succeed, it will depend on cooperation. The adoption of a Provincial Land Use Policy together with an effort to better coordinate programs and information should lead to better land use decisions being made in the future and a constant review of land use problems before and as they arise.

Issue: URBAN SPRAWL

This is: Residential or commercial land use which unduly reduces the potential of the land as a producer of goods and services to the community.

Examples of Problems:

- High cost of providing services
- Housing and commercial development on class 2 or 3 agriculture land or in water supply watersheds.
- Allows large properties, which are not being used productively, to drain community service funds without making a fair contribution to such funds. Police and fire protection (including forest fires) are often not included in development cost evaluations.

OPPORTUNITIES:

- TO IMPROVE DOLLAR RETURN ON THE INVESTMENT IN EXISTING AND PROPOSED SERVICED AREAS.
- TO PROTECT IMPORTANT PROVINCIAL RESOURCE AREAS.
- TO REDUCE FUTURE SERVICING COSTS.
- TO ENCOURAGE APPROPRIATE RURAL DEVELOPMENT THROUGH A RESTRUCTURED TAX SYSTEM.

The Province can improve the dollar return on existing and proposed serviced areas by planning development using tax incentives/disincentives to encourage such development and by "filling in" presently serviced areas before creating new areas.

The Province can also place a priority on land and water as important resources to the future social and economic needs of the people. This can be done by planning; by control of access roads and services, etc., and by boosting production from land for agriculture, forestry and recreation.

Issue: LAND OWNERSHIP

This is: The size, type and pattern of ownership. The rights and responsibility associated with owning land.

Examples of Problems:

- Thousands of 100 acre "farms" were granted by the Province since 1784. In the days of horses, "ten acres clear to earn a grant", was realistic and productive but not today.
- Many of these freeholds are scattered through the Crown forest lands.
- Land ownership is a "sacred" right of Canadians, however, speculation and non-productive use and monopoly can be expensive and restrictive in meeting individual and community needs for social and economic development.

OPPORTUNITIES:

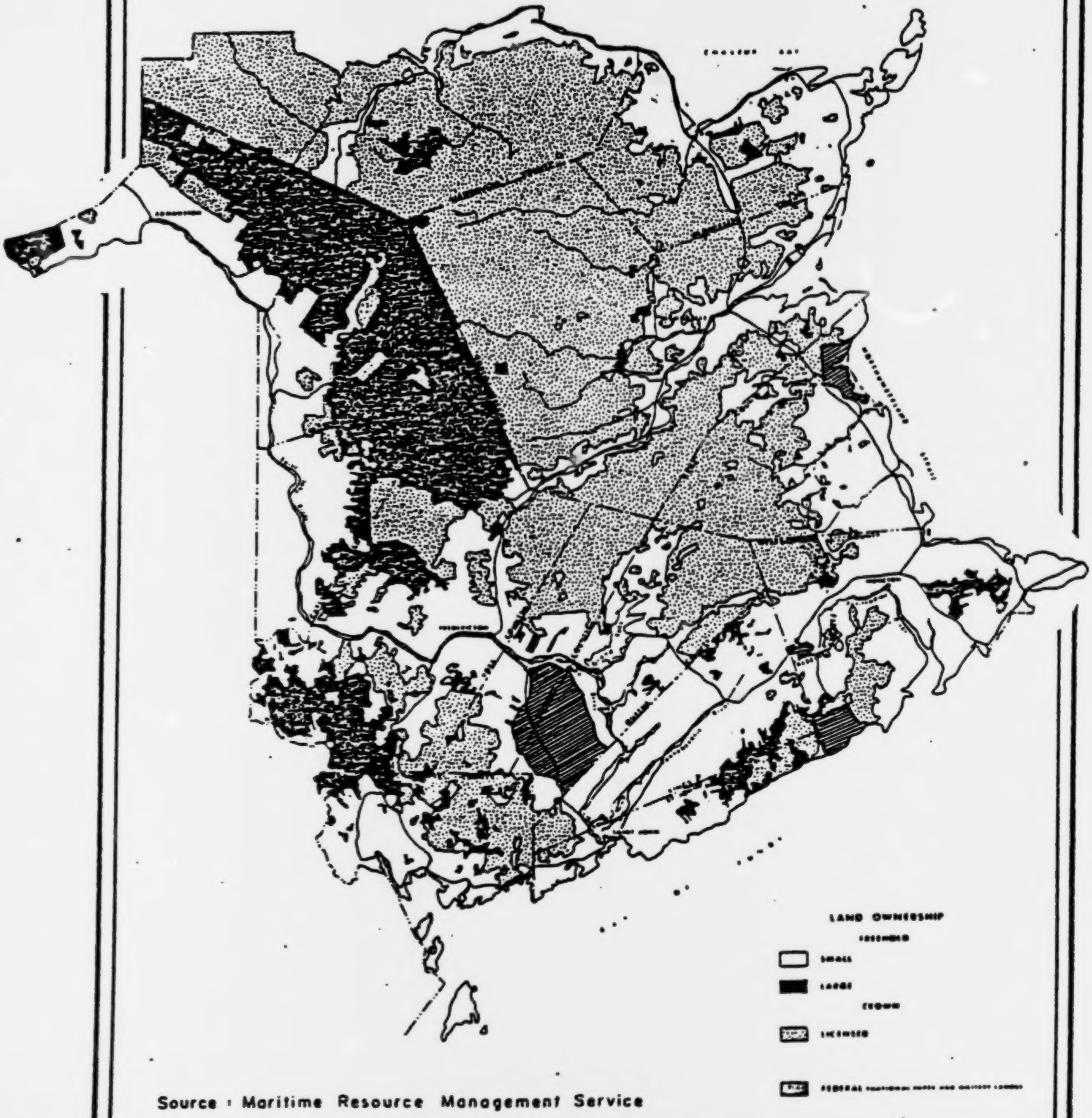
- TO CREATE ECONOMICALLY VIABLE UNITS AND THUS INCREASE EMPLOYMENT, INCOME AND REVENUE.
- TO INCREASE GOVERNMENT EQUITY IN LANDS IN WHICH THE PROVINCE HAS MADE AN INVESTMENT.
- TO REGULATE THE LAND MARKET (LAND BANKING, CONTROL OF SPECULATION, MONOPOLY, CORPORATE AND FOREIGN OWNERSHIP).

The Province could create economically viable units of tenure (increasing employment, income and revenue) by:

1. using its own land;
2. by encouraging productive use of land;
3. by implementing other consolidation programs (many examples of such programs are available).

The Province could regulate the land markets by controls (as in P.E.I.) or by directing fiscal programs toward creative viable units. Land banking by government, limiting corporate and monopoly ownership to a percentage of the resource base in an area and control of foreign ownership and/or speculation by policies which accent resident and/or productive ownership, are available options for consideration.

# LAND OWNERSHIP


LAND OWNERSHIP
FREEHOLD
SMALL
LARGE
CROWN
LICENSED
FEDERAL

Source : Maritime Resource Management Service

Issue: LAND VALUES

This is: The values of land as a resource and problems related to this.

Examples of Problems:

- One acre of D.N.R. campsite at $20 per year rental.
- Producing farm and woodlot owners cannot compete for land due to prices paid by other persons.
- Productive value of land not considered when creating parks, developments or reserves.

OPPORTUNITIES:

- TO INCREASE REVENUE FROM CROWN LAND.
- TO USE MARKET VALUES AS A BASIS FOR ALL LAND TRANSACTIONS.
- TO INCREASE RETURN ON TAX DELINQUENT LAND (GUIDE TAX SALE LANDS INTO PRODUCTIVE USE).

Increase dollar return from Crown land by basing decisions on market values, production capability and use, and encouraging tenure and use which contribute to social, economic and environmental needs of communities.

Such an approach will assure and encourage neighbouring owners and the community to identify land values and productive capacities and be able to realize values in their own transactions and management.

To achieve market value assessment. Because the Crown owns 44% of the Province's land, it can compete with private owners unless market values are common to both and all owners.

Tax delinquent land, which is presently sold at auction, could be directed to productive use if made available to consolidate the holdings of existing farm and/or woodlot owners or administered by Agriculture or Forestry for productive lease management.

**Issue:** UNDER-PRODUCTIVE LAND

This is: Land of any ownership, public or private, that could be contributing more to the individual, community or Province in social, economic or environmental terms.

Examples of Problems:

- Absentee ownership without use.
- Provincially owned land not being used (in wrong department, no value to department responsible, etc.).
- Lack of recognition of the possible uses.
- Land identified for agricultural use receives tax concessions but need not produce.

OPPORTUNITIES:

- TO INCREASE SOCIAL AND ECONOMIC RETURNS BY INCREASING PRODUCTIVITY OF LAND.
- TO INCREASE THE POTENTIAL FOR PROCESSING AND OTHER MULTIPLIER BENEFITS.

The Province can identify public lands that are under-productive, identify capability and needs and direct such lands to the proper department, agency or individual, best able to make the land productive. As an example, the Department of Transportation's lands, not needed for highways or related uses, could be transferred to the Municipality or leased to a productive user in forestry, agriculture or recreation.

The Province can increase the potential for processing and other multiplier benefits by incentive programs that encourage production. For example, Agricultural products such as blueberries, forest products such as Christmas trees and/or combination forest and recreation or agriculture and recreation development based on land capability.

The Province can identify ownerships that are unproductive and encourage productivity through personal contact and tax incentives and disincentives. The agriculture "Farm Land Identification Program" gives a tax concession for lands identified for agriculture - the lands need not produce. An extension of this program to productive agriculture or forest use could subsidize production with no direct government cost. Idle land could be taxed at the full rate.

An immediate action that would influence production and designate land could be extension of the agriculture "F.L.I.P." program. The Department of Natural Resources is desperate to involve small woodlots in fibre production. The "F.L.I.P." program commits agriculture lands and, via tax concession, assures the future of such committed land. By extending "F.L.I.P." to forest and agriculture production, the Province will increase the land-owners commitment to management and land use. Call it "P.L.I.P." (Productive Land Identification Program) and the Province automatically adopts a policy of productivity and responsible ownership which should be a base for any land policy.

Issue: INFORMATION

This is: The need for decision makers, planners and the public for land information. (Data is not necessarily information)

Examples of Problems:

- Many departments and agencies have data but no means exist to relate or coordinate the pieces.
- The Province has commissioned many subject studies but the guidelines and objectives were single subject oriented. "Stand alone" data is difficult to integrate.
- Difficulty of planning forest spray program when information on blueberry field location is not available.
- Difficulties for developers in getting access to land information.

OPPORTUNITIES:

- TO COORDINATE LAND INFORMATION COLLECTION, STORAGE AND PRESENTATION, (INCLUDING OWNERSHIP INFORMATION).
- TO IMPROVE DECISION MAKING.
- TO IDENTIFY REAL OPPORTUNITIES FOR INCREASED PRODUCTIVITY.
- TO CLARIFY CAUSES OF CONFLICTS.

We can coordinate land information collection, storage and presentation by setting guidelines and rules that make the data compatible with related data. Modern technology provides tools that will combine various lands and other types of data if basic collection is on a common base.

Also, we can improve decision making. If executives, policy makers and planners have all related data available, decision quality will improve and the costly errors of insufficient data will be reduced.

Such information can be used to identify real opportunities and clarify problems. A data system will readily adapt to changes and implications of decisions and improve operational results by improving quality of decisions and identifying related needs and opportunities. An example is class 2 and 3 agriculture land in river valleys which is small by tenure and broken by utilities. Better information would help protect water and agriculture land and could lead to tenure size improvements.

Developers and the general public also need improved access to land information.

Issue: LAND USE PLANNING

This is: The identification of land capability and use coupled with an analysis of the socio-economic factors affecting land in order to prepare an operational strategy for the long term development of the land.

Examples of Problems:

- Waste disposal sites.
- Class 2 Agriculture land used for industry or subdivision.
- Agriculture and Forestry inputs to Community Planning weak or non-existent.
- Community Planning not a resource planning tool.

OPPORTUNITIES:

- TO RECOGNIZE THAT PLANNING IS NECESSARY TO ACHIEVE MAXIMUM LAND USE BENEFITS.
- TO PREVENT MOST CONFLICTS AND IDENTIFY ALTERNATIVES IN CONFLICT RESOLUTION.
- TO ENSURE CONTINUITY OF BENEFIT INTO THE FUTURE.
- TO ENSURE COMPLETE EVALUATION BEFORE DEVELOPMENT (INCLUDING WASTE DISPOSAL).
- TO IMPROVE THE SOCIAL ENVIRONMENT.
- TO PROTECT IMPORTANT PROVINCIAL RESOURCE AREAS.
- TO HELP GRASP OTHER OPPORTUNITIES.

Planning is the best known method of developing any area, at least overall cost for long term maximum benefits. Planning that is effective will ensure the right mix of social, economic and environmental benefits and needs.

**Issue:** REGULATION

This is: The legal restraints and requirements that protect land and control its development; including the degree of enforcement.

Examples of Problems:

- There are at least 24 Acts affecting Land Use. (See Appendix E).
- Regulations restricting farming activities because of urban encroachment.
- Regulations that solve one problem but lead to another; example- one acre lots reduce pollution risks but encourage urban sprawl.

OPPORTUNITIES:

- TO REVIEW, COORDINATE AND SIMPLIFY EXISTING LEGISLATION AFFECTING LAND USE.
- TO INCREASE THE EFFECTIVENESS OF EXISTING LEGISLATION AND REDUCE ADMINISTRATION AND ENFORCEMENT COSTS.

The current review of all Government legislation is expected to remove some of the more obvious inconsistencies in legislation, but there will still be a need, we expect, to review some current legislation from an overall land use perspective. There is also considerable variation in the degree and manner in which different legislation is enforced. This results in effects not apparent from the written word itself.

Issue: INFRASTRUCTURE

This is: The markets, utilities, services and utility corridors that interconnect the community, municipal and provincial lands.

Examples of Problems:

- The location of industrial parks and the consideration of utilities, services and employment centers without considering the land resource effects of such a park.
- The servicing of ever increasing areas of housing without control or limit; while serviced land lies idle.
- The overwhelming difficulties for small producers of obtaining reliable access to markets.

OPPORTUNITIES:

- TO PROTECT EXISTING INVESTMENT, BOTH PRIVATE AND PUBLIC, IN THE PHYSICAL INFRASTRUCTURE.
- TO MINIMIZE ADDITIONAL SERVICING COSTS BY CONSIDERING ALTERNATIVES.
- TO PREPARE AN INTEGRATED INFRASTRUCTURE STRATEGY THAT RELATES TO LAND USE POTENTIAL.

The Province could protect the existing investment in the physical infrastructure and resist expansion until the capacity of the systems are 80% utilized, thereby increasing revenue from existing investments and reducing capital outlays.

The Province could also clarify and decide on where services will and will not be provided. As a modification, potential users would know they can go outside of such areas but only if they pay the full costs of the extended services.

The Province, if it is to develop to its full potential, should prepare an integrated infrastructure strategy that relates to the land use potential. Critical in this area is assisting small producers (of fish, food or fibre) find reliable access to markets. Once the market is assured, the producers will respond.

Issue: PERCEPTIONS

This is: The perception and outlook of each citizen on land, land values, land use, land ownership and land productivity.

Examples of Problems:

- The different outlooks of the small woodlot owner and the pulp and paper industry.
- The different outlooks of the large freeholder and and the large leaseholder.
- The perception that land ownership is a near-"sacred" right.
- The perception that planning means Government control.
- The perception that you can only manage by direct control rather than by example, encouragement and incentive.

OPPORTUNITIES:

- TO RECOGNIZE THAT MANAGEMENT OF LAND PRODUCES BENEFITS AND JOBS.
- TO RECOGNIZE THAT MANY DECISIONS MADE NOW HAVE LONG TERM LAND USE IMPLICATIONS.
- TO RECOGNIZE THAT LAND-BASED SMALL BUSINESS REQUIRES TRAINED HELP.
- TO RECOGNIZE THAT SMALL SCALE RESOURCE DEVELOPMENT IS LEGITIMATE SMALL BUSINESS AND APPROPRIATE FOR NEW BRUNSWICK.

The seeds of our present harvest of land use conflicts and issues can be found in our past perceptions and expectations. We settled and used the land knowing there was plenty more over the hill. The current "Protect agriculture land", "Grow trees faster", "Stop pollution", "Spend less on services" issues are examples. We can pessimistically perceive "the cost to be too high" or "the people won't accept change" or we can optimistically seek alternatives.

Concerted and cooperative approach to land use need not be expensive or publically unacceptable. A land use policy that protects the air, water and food supplies and encourages the production of woods and services from land can be welcomed and supported by most citizens.

Issues: COST

Examples of Problems:

- Exploitation of resources without thought for future yield with resulting decrease of resource value.
- Difficulty of obtaining funds for management now to produce benefits in the future.
- Costs of demands for access to highways (Dollars and Lives).
- Costs of not increasing production when 10 fold and 15 fold increases in revenue have been demonstrated.

OPPORTUNITIES:

- TO RECOGNIZE THAT COORDINATED MANAGEMENT NOW COULD INCREASE RETURNS RAPIDLY IN REDUCED UNIT COSTS AND PRODUCTION OF GOODS AND SERVICES.
- TO RECOGNIZE THAT WE MUST INVEST IN RESOURCE PLANNING AND MANAGEMENT NOW, IF WE WANT INCREASED AND CONTINUED RETURNS IN DOLLARS AND JOBS NOW AND LATER.
- TO RECOGNIZE THAT INVESTMENT IN RESOURCE PROCESSING MAKES SENSE ONLY IF RESOURCE MANAGEMENT IS ASSURED.
- TO CONSIDER WHETHER 3% OF THE PRESENT PROVINCIAL BUDGET IS ENOUGH TO SPEND ON THE LAND USE MANAGEMENT THAT IS REQUIRED TO ENSURE OUR FUTURE WEALTH.

We strongly believe that now is the time for us to recognize the potential opportunities still available from our land resources if we focus our attention on maintaining and increasing their productivity.

If the current shortage of money prevents these changes from starting now, we shall remain short of money.

## TABLE B1

### ISSUES AND OPPORTUNITIES (1)

| | |
|---|---|
| **Issues: COST**<br>Examples of Problems:<br>- Exploitation of resources without thought for future yield with resulting decrease of resource value;<br>- Difficulty of obtaining funds for management now to produce benefits in the future;<br>- Costs of demands for access to highways (Dollars and Lives);<br>- Costs of not increasing production when 10-fold and 15-fold increases in revenue have been demonstrated. | OPPORTUNITIES:<br>- TO RECOGNIZE THAT COORDINATED MANAGEMENT NOW COULD INCREASE RETURNS RAPIDLY IN REDUCED UNIT COSTS AND PRODUCTION OF GOODS AND SERVICES.<br>- TO RECOGNIZE THAT WE MUST INVEST IN RESOURCE PLANNING AND MANAGEMENT NOW, IF WE WANT INCREASED AND CONTINUED RETURNS IN DOLLARS AND JOBS NOW AND LATER.<br>- TO RECOGNIZE THAT INVESTMENT IN RESOURCE PROCESSING MAKES SENSE ONLY IF RESOURCE MANAGEMENT IS ASSURED.<br>- TO CONSIDER WHETHER 3% OF THE PRESENT PROVINCIAL BUDGET IS ENOUGH TO SPEND ON THE LAND USE MANAGEMENT THAT IS REQUIRED TO ENSURE OUR FUTURE WEALTH. |
| **Issues: PERCEPTIONS**<br>Examples of Problems:<br>- The different outlooks of the small woodlot owner and the pulp and paper industry;<br>- The different outlooks of the large freeholder and the large leaseholder;<br>- The perception that land ownership is a near-"sacred" right;<br>- The perception that planning means Government control;<br>- The perception that you can only manage by direct control rather than by example, encouragement and incentive. | OPPORTUNITIES:<br>- RECOGNIZE THAT MANAGEMENT OF LAND PRODUCES BENEFITS AND JOBS.<br>- TO RECOGNIZE THAT MANY DECISIONS MADE NOW HAVE LONG TERM LAND USE IMPLICATIONS.<br>- TO RECOGNIZE THAT LAND-BASED SMALL BUSINESS REQUIRES TRAINED HELP.<br>- TO RECOGNIZE THAT SMALL SCALE RESOURCE DEVELOPMENT IS LEGITIMATE SMALL BUSINESS AND APPROPRIATE FOR NEW BRUNSWICK. |
| **Issues: INFRASTRUCTURE**<br>Examples of Problems:<br>- The location of industrial parks and the consideration of utilities, services and employment centres without considering the land resource effects of such a park;<br>- The servicing of ever increasing areas of housing without control or limit; while serviced land lies idle;<br>- The overwhelming difficulties for small producers of obtaining reliable access to markets. | OPPORTUNITIES:<br>- TO PROTECT EXISTING INVESTMENT, BOTH PRIVATE AND PUBLIC, IN THE PHYSICAL INFRASTRUCTURE.<br>- TO MINIMIZE ADDITIONAL SERVICING COSTS BY CONSIDERING ALTERNATIVES.<br>- TO PREPARE AN INTEGRATED INFRASTRUCTURE STRATEGY THAT RELATES TO LAND USE POTENTIAL. |
| **Issues: REGULATION**<br>Examples of Problems:<br>- There are at least 24 Acts affecting Land Use. (See Appendix E).<br>- Regulations restricting farming activities because of urban encroachment.<br>- Regulations that solve one problem but lead to another; example - one acre lots reduce pollution risks but encourage urban sprawl. | OPPORTUNITIES:<br>- TO REVIEW, COORDINATE AND SIMPLIFY EXISTING LEGISLATION AFFECTING LAND USE.<br>- TO INCREASE THE EFFECTIVENESS OF EXISTING LEGISLATION AND REDUCE ADMINISTRATION AND INFORCEMENT COSTS. |
| **Issues: URBAN SPRAWL**<br>Examples of Problems:<br>- High cost of providing services;<br>- Housing and commercial development on Class 2 or 3 agriculture land or in water supply watersheds;<br>- Allows large properties, which are not being used productively, to drain community service funds without making a fair contribution to such funds. Police and fire protection (including forest fires) are often not included in development cost evaluation. | OPPORTUNITIES:<br>- TO IMPROVE DOLLAR RETURN ON THE INVESTMENT IN EXISTING AND PROPOSED SERVICED AREAS.<br>- TO PROTECT IMPORTANT PROVINCIAL RESOURCE AREAS.<br>- TO REDUCE FUTURE SERVICING COSTS.<br>- TO ENCOURAGE APPROPRIATE RURAL DEVELOPMENT THROUGH A RESTRUCTURED TAX SYSTEM. |

## TABLE B2

## ISSUES AND OPPORTUNITIES (2)

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| Issue: LAND USE PLANNING<br>Examples of Problems:<br>- Waste disposal sites;<br>- Class 2 Agriculture land used for industry or subdivision;<br>- Agriculture and Forestry inputs to Community Planning weak or non-existent;<br>- Community Planning not a resource planning tool. | OPPORTUNITIES:<br>- TO RECOGNIZE THAT PLANNING IS NECESSARY TO ACHIEVE MAXIMUM LAND USE BENEFITS.<br>- TO PREVENT MOST CONFLICTS AND IDENTIFY ALTERNATIVES IN CONFLICT RESOLUTION.<br>- TO ENSURE CONTINUITY OF BENEFITS INTO THE FUTURE.<br>- TO ENSURE COMPLETE EVALUATION BEFORE DEVELOPMENT (INCLUDING WASTE DISPOSAL).<br>- TO IMPROVE THE SOCIAL ENVIRONMENT.<br>- TO PROTECT IMPORTANT PROVINCIAL RESOURCE ROADS.<br>- TO HELP GRASP OTHER OPPORTUNITIES. |
| Issue: INFORMATION<br>Examples of Problems:<br>- Many departments and agencies have data but no means exist to relate or coordinate the pieces;<br>- The Province has commissioned many subject studies but the guidelines and objectives were single subject oriented. "Share alone" data is difficult to integrate;<br>- Difficulty of planning forest spray program when information on blueberry field location is not available;<br>- Difficulties for developers in getting access to land information. | OPPORTUNITIES:<br>- TO COORDINATE LAND INFORMATION COLLECTION, STORAGE AND PRESENTATION (INCLUDING OWNERSHIP INFORMATION).<br>- TO IMPROVE DECISION MAKING.<br>- TO IDENTIFY REAL OPPORTUNITIES FOR INCREASED PRODUCTIVITY.<br>- TO CLARIFY CAUSES OF CONFLICTS. |
| Issue: UNDER-PRODUCTIVE LAND<br>Examples of Problems:<br>- Absentee ownership without use;<br>- Provincially owned land not being used (in wrong department, no value to department responsible, etc.). | OPPORTUNITIES:<br>- TO INCREASE SOCIAL AND ECONOMIC RETURNS BY INCREASING PRODUCTIVITY OF LAND.<br>- TO INCREASE THE POTENTIAL FOR PROCESSING AND OTHER MULTIPLIER BENEFITS. |
| Issue: LAND VALUES<br>Examples of Problems:<br>- One acre of D.N.R. campsite at $20 per year rental;<br>- Producing farm and woodlot owners cannot compete for land due to prices paid by other persons;<br>- Productive value of land not considered when creating parks, developments or reserves. | OPPORTUNITIES:<br>- TO INCREASE REVENUE FROM CROWN LAND.<br>- TO USE MARKET VALUES AS A BASIS FOR ALL LAND TRANSACTIONS.<br>- TO INCREASE RETURN ON TAX DELINQUENT LAND (GUIDE TAX SALE LANDS INTO PRODUCTIVE USE). |
| Issue: LAND OWNERSHIP<br>Examples of Problems:<br>- Thousands of 100 acre "farms" were granted by the Province since 1784. In the days of horses, "ten acres clear to earn a grant", was realistic and productive but not today;<br>- Many of these freeholds are scattered through the Crown forest lands;<br>- Land ownership is a "sacred" right of Canadians, however, speculation and non-productive use and monopoly can be expensive and restrictive in meeting individual and community needs for social and economic development. | OPPORTUNITIES:<br>- TO CREATE ECONOMICALLY VIABLE UNITS AND THUS INCREASE EMPLOYMENT, INCOME AND REVENUE.<br>- TO INCREASE GOVERNMENT EQUITY ON LANDS IN WHICH THE PROVINCE HAS MADE AN INVESTMENT.<br>- TO REGULATE THE LAND MARKET (LAND BANKING, CONTROL OF SPECULATION, MONOPOLY, CORPORATE AND FOREIGN OWNERSHIP). |

# APPENDIX C

# APPENDIX C

## RECOMMENDATIONS ON LAND USE FROM PREVIOUS STUDIES

In recent years there have been a number of reports prepared on the resources of New Brunswick. While no one has had, as its central theme, land use, a number have included recommendations relating to it. This Task Force began its work by studying these reports and recommendations.

The reports reviewed are:

Page

1. Summary C2

2. Recommendations from Various Reports

Royal Commission on Finance and Municipal Taxation (M.T.) 1963 C3

N.B. Task Force on Social Development (S.D.) 1971 C6

Forest Resources Study (F.R.S.) 1974 C8

Saint John River Basin Board (S.J.R.B.B.) 1975 C10

Task Force on Non-Incorporated Areas (TF N-I.A.) 1976 C13

Agricultural Potential of Eastern N.B. (A.P.) 1976 C14

Agricultural Resources Study (A.R.S.) 1977 C16

Legislative Select Committee on Rural Life and Land Use (S.C.) 1977 C21

Community Planning Act Review (C.P.A.) 1979 - W. A. Cooper C23

Study on Sprawl in N.B. (S.C.) 1980 C25

N.B. Federation of Agriculture Task Force (N.B.F.A.) 1981 C27

Controlled Access Highway Study (C.A.H.A.) 1981 C32

Land Use and the Environment in N.B. - Environmental Council 1981 C33

cont . . .

Page

Agricultural Land Use - N.B. Federation of Agriculture 1981 C35

3. Selected Quotations from Previous Studies C38

# RECOMMENDATIONS FROM PREVIOUS STUDIES

## Summary

On the Organization of Government Activity, five reports advised the establishment of some type of a permanent Land Use Secretariat or Board (F.R.S., S.S., A.R.S., S.J.R.B.B., M.T.); three reports recommended an Officials Committee on Land Use be established (S.C., F.R.S., N.B.F.A.); two reports recommended a Legislative Committee (F.R.S., N.B.F.A.); and two reports recommended the formation of a Cabinet Committee on Land Use (A.R.S., N.B.F.A.).

On Policy and Planning, there is general agreement on the need for comprehensive land use planning guidelines, with all agencies involved in land use also involved in planning, the need for farm and woodlot land consolidation was pointed out by both the F.R.S. and A.R.S. The advisability of tying government investment in land development to use requirements has been demonstrated by the Select Committee and N.B.F.A. A number of suggestions have been make about the need for local government in rural areas and more flexible rural planning and subdivisions procedures.

The need for improved land information is implied in many reports and specifically identified in A.R.S., F.R.S., S.J.R.B.B., S.C., and N.B.F.A.

The use of taxation to encourage improved management was made in the F.R.S., M.T., and N.B.F.A. reports.

The need for further development of the productivity of the land base through drainage and clearing was identified by the A.R.S. while S.J.R.B.B. report pointed out the need for conservation of soil and water through erosion control.

The control of land use was approached in a variety of ways in these reports with recommendations for requirements for registration of corporate ownership (A.R.S.) through recommendations to control the use of specific types of land (A.R.S., S.J.R.B.B., S.S.) to the identification of agricultural priority areas with local control over land use (N.B.F.A., A.A.).

While the specific recommendations for action differed, all reports identified the need for greater government involvement in the use of the land resource base of the Province.

The following pages contain land use related quotations from the various reports.

## 1. Report of the Royal Commission on Finance and Municipal Taxation, 1963

### The New Municipal Structure

2. "It has by now become apparent that there will be major changes in the role of municipal government if our recommendations concerning education, welfare, hospitals and public health, justice and detentions are adopted...." P. 170

5. "It should not be thought that the disappearance of county councils would spell an end to the counties themselves. Local identities are deeply rooted and no onslaught upon them is intended. The counties would continue to exist as distinctive areas with all their proud histories intact.... It should be remembered that we are not recommending the centralization of administration. We are recommending the centralization of responsibilities and the decentralization of administration in regional offices located where they can best serve the residents of all parts of the Province." P. 170

8. "We recommend that the areas of competence and responsibility of all units of government be much more clearly delineated. In the process, the tangle of overlapping statutes of great diversity which currently regulates the structure and taxing powers of local government should be swept away and replaced by a single comprehensive municipalities act. All existing legislation pertaining to municipalites should be repealed. These include the present so-called general acts for cities, towns, villages, counties, local improvement districts, the rural commissions, community planning and control of municipalities, as well as any parts of public or private acts respecting individual municipalities which are inconsistent with or in any way exceed or impinge upon matters dealt with in our recommendations." P. 171

10. "....We recommend that the entire province fall into one or other of the following classifications: 1) the municipalities: cities, towns, and villages; 2) rural areas: (a) Local Service Districts to be administered directly by a new Municipal Affairs Commission and (b) other territory within which no services of a local nature are provided; and 3) the provincial and federal Crown lands and forest." P. 171

18. "There should be a separate office of the new Municipal Affairs Commission to administer the districts which require only limited local services and which we have termed local service districts...." P. 172

23. "It is recommended that the entire province be brought under community planning. Cities and towns should be permitted to continue their own planning agencies with the approval of and in accordance with the regulations of the provincial planning branch. The provincial branch should administer a plan covering all territory which does not fall under the jurisdiction of a city or a town which has its own adequate planning programme...." P. 173

24. "With the discontinuation of municipal functions by the counties, it will be necessary for the Municipal Affairs Commission to assume responsibility for the approval, licensing, planning and control of all construction outside the jurisdiction of cities and towns...." P. 173

## XXIII. Local Service Districts (rural area)

115. The many scattered settlements in rural areas are an especial problem of municipal administration in all provinces. Most of them are not large enough to form viable municipalities but they require local services which should nevertheless be paid for by the residents who enjoy them. Such local financial responsibility for local services is in fact basic to the scheme of municipal finance which we are proposing. There is the additional important consideration that the provision of public works by the provincial government without direct charge to the residents concerned serves to stimulate appetites to the point of wasteful expenditure. (P. 27)

116. In this respect the situation in both the local improvement districts and unincorporated communities is most unsatisfactory. Through the years, the Department of Public Works has provided and maintained roads, curbs, sidewalks and certain other local services in unincorporated areas for some local improvement districts which fail to incorporate to provide the particular services for themselves. Many of these services were installed in subdivision just outside the boundaries of the cities, towns, and villages. No change was made for many of these public works and as little as one-half for others. An estimate made for us sets the cost of these public works to the province at $2,500,000 in 1961. Although this figure is little more than a calculated guess, it nevertheless indicates that the amounts of the expenditures in question are substantial. The accounts of the Department of Public Works are not kept in such a way that the actual expenditure can be ascertained. (P. 27)

117. We consider that this manner of coping with the public works requirements of the local improvement districts and the unincorporated communities is most inequitable. It is unfair that the general provincial revenues should defray costs in some communities which the residents of cities and towns must pay for themselves and which other residents of the counties must do without. (P. 27)

118. We recommend that no public works, whatever, other than the maintenance of the provincial highway system, should be performed by the Department of Public Works in rural areas until arrangements have been made with the new villages or with the Municipal Affairs Commission on behalf of the new local service districts, for the costs to be defrayed through equitable taxation of those receiving the service. (P. 27)

## 2. Recommendations of N.B. Task Force on Social Development, 1971

"Society engages in a number of activities aimed at controlling and improving the man made environment. Zoning regulations, garbage collection, water and sewage works, land assembly, housing standards, and construction of new buildings of any type all have a bearing on the quality of our environment. Many of these activities are the responsibility of local town or city councils, or of the provincial government where communities are not incorporated."

"That present policies be altered, both provincially and federally, to ensure that housing needs are met where these needs exist. In other words, given that about ½ of our population lives in communities of less than 1000, funds for improvements of housing among low-income families should be equally available in rural and in urban areas."

"That programs aimed at total community development be designed and implemented for rural communities where a large majority of homes are found to be inadequate; and that funds for these projects, which would be highly labour-intensive in nature, be provided through integration of various manpower, welfare, housing and rural development programs."

"The population of New Brunswick in 1966 was 51% urban and 49% rural. It is a fact that the trend toward urbanization in our province has been much less pronounced than in many areas of North America. However, it is probably natural that the rural population is beginning to feel the pressures of urbanization. This raises in their minds very basic questions about the values placed on the 'quality of life', about priorities in planning and government spending, about services and programs provided for rural people as compared to urban people."

"Generally there is a feeling that policies are so designed as to encourage not only the younger people, but a significant portion of the adult population to move to the towns and cities. Many of the adult group find this not only threatening, but maintain that life for them is better where they live now. They seriously question the relative expenditure on urban renewal, on provision of massive amounts of money for urban infrastructure, and the comparatively small amounts provided for rehabilitation for rural housing, or for new housing and services in the rural areas.

While many rural residents reluctantly accept that small farms and much of the traditional type of woods work and fishing no longer provide an adequate income, they do see the need for imaginative programs that will lead to new forms of industrial activity. In addition, tourism is almost universally seen as having great potential, particularly for rural areas."

"Facilities and services are not as readily available in the rural areas, for example, vocational training, library services, counselling, cultural activities, health services, and so on."

"There is an awareness that in some cases federal policies, as applied to specific areas without adequate planning and involvement, result in social upheaval and insecurity on the part of many rural people. They feel helpless, before programs which they are not convinced will work and which are often felt to be irrelevant to their needs."

"Throughout the rural areas, people feel isolated from the decision-making centres and helpless to change or improve their lot. The emphasis on large scale economic development aimed at a few centres leads them to question the value placed upon people and their way of life."

"That regional development councils be established immediately in the province."

Participation and Development
Report of the New Brunswick Task Force on Social Development
Fredericton, 1971
Vol. 1-3

## 3. Report of the Forest Resources Study, 1974

Summary of Recommendations Relating to Land Use:

- "...rational planning of the use of forest resources can be accomplished only within a framework of comprehensive land-use planning." (page numbers from Conspectus) p. 12
- "...the planned use of land is a matter of paramount importance;" p. 13
- "...all agencies with a major interest in land use should be involved in the process of planning, but that the final decisions in this matter should rest with persons who themselves suffer from no conflict of interest in those decisions." p. 13
- "Land-use planning... should be started immediately. One of the early steps in this process should be the collection of much more data on recreational opportunities of various kinds, fish and wildlife needs, the water resources, and environmentally "sensitive" areas. Such information should be stored in a much-needed land-data-bank." p. 13
- "...the prevailing practice should be the multiple use of all forest lands, within a system of priorities, because this offers the maximum benefits to the greatest number of people." p. 14
- "It will therefore be necessary for government to make a substantial long-term investment in improving small woodlot properties. This program would have as its objective the realization of the full potential of these forest lands through measures aimed at... (iv) consolidating holdings into economically more viable units, ..." p. 31
- "...woodlot owners who wish to develop and diversify the uses of their holdings should be given encouragement and technical assistance to do so." p. 32
- "The standard tax-rate should continue to be applied to woodlands... In the long run, however, we believe a more desirable objective would be to move towards taxation of woodlands on the basis of the market value of the land and the standing crop on it coupled with a system of tax credits payable for the production of wood for processing in Canada and for woodlands in which logging may be restricted by law." p. 33

- "A Standing Committee of the Legislature should be foremost in codifying the political policies and objectives of resource management." p. 42

- "Within the Government, the Ministers of all departments directly concerned with natural resources (particularly Agriculture, Natural Resources and Fisheries and Environment) should join in an informal committee to deal with problems which are either common to all or which have interrelationships with other departments." p. 42

- "...we propose the appointment of a Land-Use Planning Board under the chairmanship of a Member of the Legislature with a full-time Deputy Chairman who should be a professional planner. All other members of the Board would be drawn from those Departments of government directly concerned; they would be full-time planners linking their department's work to the activities of the Board. The Board should be empowered to lay down basic, but binding, guidelines and priorities applicable to all land-use programs in the Province and, in cases of merging or conflicting interests in land use, would become involved in harmonizing the uses and resolving conflicts. All plans submitted under the Community Planning Act should conform with the Board's rulings. The Board should be responsible to the Premier." p. 43

## 4. Report of the Saint John River Basin Board Recommendations Relating to Land Use, 1975

The Board recommends that the organization responsible for water management must: exercise a strong influence over land use; and

Introduce a system of overall land use zoning and regulation through formal inter-agency liaison and negotiation. p. 40

Responsibility for review and approval of those aspects of land use management and regulation that are associated with the necessity to protect the community from the effects of flooding should rest with the New Brunswick Department of the Environment. p. 46

A Land Use Planning Organization, with representation from all New Brunswick agencies with a concern for land or water management, should be established to carry out overall land use planning. The Organization should report at Cabinet level. Its terms of reference powers and constitution should be the subject of further detailed study. The interests of water management should be represented on this Organization by the New Brunswick Department of the Environment. p. 50

Liaison and negotiation are recommended as the appropriate means of achieving agreement among all resource development agencies on land use planning and regulation. In cases of irresolvable conflict, the issue should be referred to the Cabinet through the Cabinet Secretariat. p. 50

A major program should be instituted to promote and assist the introduction of soil conservation measures on farms. It should include:

a) An intensive educational thrust to acquaint farmers with the problem and to point out the advantages of erosion control;

b) An increased capability in the Department (of Agriculture and Rural Development) to assist farmers to adopt conservation practices;

c) An increased financial contribution to farmers to cover adjustment costs of adopting an erosion control program. p. 58

A program of topographic surveys should be undertaken in order to delineate areas requiring special treatment because of soil erosion, and to permit planning of erosion control works. p. 58

A soil and water survey should be carried out to assess the full extent of the erosion problem. p. 58

New studies should be undertaken of the costs and benefits of improving the drainage of the low-lying agricultural land in the Maugerville-Sheffield area. p. 59

The land planning data presently available in the Canada Land Inventory should be upgraded and refined by the introduction of a detailed soil survey of areas indicated as having high capability for agriculture. p. 59

The Department of Agriculture and Rural Development, in co-operation with the Department of the Environment, should develop a program of farmer information and participation on problems of land and water management. p. 59

An inventory should be prepared of all wetland and upland habitat and this should be used for determining priorities for wildlife management in wetland areas. p. 68

Special maps should be prepared showing the areas used by, or essential to, rare and endangered species. p. 68

The Department (of Municipal Affairs) should introduce a policy of making subdivisions on flood plains ineligible for financial assistance for services. p. 73

The Department (of Municipal Affairs) should actively discourage ribbon development by a combination of rural zoning and financial instruments. p. 73

The Department (of the Environment) should, as a project, contribute its skills, experience and ideas to shaping the organization and responsibilities of the proposed land use planning organization. p. 76

The Department (of the Environment) should also:

a) Prepare guidelines for land use zoning for protection of the water resource.

b) Prepare guidelines for flood plain zoning.

c) Prepare guidelines for construction, forest operations and agricultural practices for protection of water resources. p. 76

As an on-going program, the Department (of the Environment) should participate in land use planning for both community development and resource development. p. 76

Flood plains should be zoned to prevent non-agricultural settlement. The Department of the Environment should take the lead in delineating the flood plain boundaries and in recommending zoning restrictions and building regulations; the proposed land use planning organization should be involved in acceptance and promulgation of the zoning regulations. p. 79

The Department of Municipal Affairs should involve itself in the broad field of resource planning in co-operation with the agencies responsible for resource development and conservation. p. 81

The proposed Land Use Planning Organization should zone all flood plains for appropriate uses and prepare regulations for land use practices and a program for effective control. p. 82

The Land Use Planning Organization should prepare programs for setting aside and protecting, by whatever means are most suitable, ecologically vulnerable areas. p. 83

The Land Use Planning Organization should provide the forum for determining the best solutions to the problems of soil erosion and siltation of stream channels and should develop programs of education, training and public involvement, as well as of regulation, to overcome them. p. 83-84

The Land Use Planning Organization should prepare regulations for surface mining and quarrying to protect the interests of all land and water users. p. 84

The Land Use Planning Organization should prepare guidelines for disposal site location and regulations for their operation and should institute training and public participation programs for owners, operators and users. p. 84

## 5. Report of the Task Force on Non-Incorporated Areas in New Brunswick, 1976,

### (Recommendations Relating to Land Use)

1. All existing legislation pertaining to local service districts be repealed.

2. Incorporation of eleven new municipalities with the status of "Rural Municipalities" to include all the non-incorporated areas of the Province, except such areas in the Parish of Grand Manan, with the same general powers and responsibilities as prescribed in the Municipalities Act.

8. The Department of Municipal Affairs be initially responsible for installation, operation and maintenance of water and sewer systems for areas within the limits of a rural municipality.

10. The Province study the feasibility of establishing a provincial utility corporation to assume the responsibility of providing water and sewer services in the rural municipalities and also to purchase an existing municipal system if the municipality in question requests it of the corporation.

14. The Provincial waste disposal sites be transferred to the new rural municipalities after they have been brought to a standard approved by the Department of the Environment.

16. The designated provincial roads in the rural municipalities remain the responsibility of the Province but the strictly subdivision streets become the responsibility of the rural units.

22. Eleven planning districts be established under the Community Planning Act and that the boundaries of such districts be the outside boundaries of the eleven rural municipalities with all existing cities, towns and villages located therein to be included in the planning districts.

Remaining recommendations refer to details of carrying out and financing the changes.

## 6. Report of the Standing Senate Committee on Agriculture

## Kent County Can be Saved - An Inquiry Into The Agricultural Potential of Eastern N.B., 1976.

"Agriculture in Kent County has, today, declined greatly from the prosperous industry of the late 19th and early 20th centuries. Although some 17 percent of the heads of household are farmers, 80% of these live on subsistence farms and could not be considered commercial operators. The agricultural resource remains, but today it suffers from neglect."

"Unemployment statistics for the County are similar to those in other rural areas. On a yearly average, it is 40 to 50 percent higher than for the province as a whole with or high seasonal component."

"The total area of Kent County is 1,114,643.2 acres. 71.9% is regarded as suitable for a range of crops." The climate and temperature are very favourable for agriculture, much the same as P.E.I. or the Annopolis Valley of N.S. Too much rainfall in the interior makes for wet soil conditions."

"Among the field crops suitable for the county are wheat, oats, barley, rye, mixed grains, buckwheat, field peas and beans, tame hay and other fodder crops, potatoes, tobacco, and sugar beets."

"It has been established that a large range of fruits and vegetables can be produced in and marketed from Kent County. These are basically the cool-season vegetables such as asparagus, beans, beets, broccoli, brussel sprouts, cabbage, carrots, cauliflower, celery, corn, lettuce, onion, parsnip, peas, potatoes, radishes, spinach, turnips and tomatoes and fruits such as apples, strawberries, blueberries and raspberries."

1. That the federal and provincial governments and the people of Kent go on record committing themselves to a consciencious long term agricultural development effort in Kent County.

4. That the Kent County Development Association, in co-operation with local governments, undertake a long term contractual agreement with an experienced agriculture and food marketer on an incentive basis with a basic salary and should put at the disposal of this marketer and the Development Association technical experts as required.

5. That the Kent County Development Association enter into a long term contractual agreement with a top agricultural production specialist who is highly competent in production of all crops as well as livestock. Special emphasis must be given to his ability to motivate and lead farmers. He should be compensated on an incentive basis as is the marketer.

6. The provincial department of Agriculture and Rural Development should provide back up support for the association production man through its agricultural representative service and its research activities. All activity of government staff with respect to agricultural production should be coordinated with this individual. The Association production man should attempt to apply the county agricultural development plan on a regional and farm basis whereby production planning and development would be worked out on an individual farm basis.

12. That the New Brunswick Department of Agriculture in co-operation with the Kent County Development Association introduce a farm management and planning service whereby annual on farm visits are made.

35. That the F.C.C. in co-operation with the Small Farm Development Program establish a program aimed at agricultural development and not merely stabilization.

## 7. Report of the Agricultural Resources Study, 1977;

### Resumé of the Land Use Recommendations

### Institutional Framework

In order to provide an institutional framework, the Study recommends the establishment of a Cabinet Committee on Land Use and that the responsibility of this Committee be to:

1. Initiate and recommend land use policies;
2. Co-ordinate the land use planning activities of the various government departments and agencies involved as managers and as users of land resources;
3. Develop land use guidelines for local planning authorities;
4. Provide leadership in the total field of land use.

The Committee should... be supported by a secretariat to be located within the Cabinet Secretariat.

... the role of the Secretariat would be as follows:

1. To provide a specific staff focus for provincial land use policy development, co-ordination and integration.
2. To provide broad analytic capability for the Cabinet Committee on Land Use.
3. To provide a province-wide context for reviewing district and regional plans.
4. To co-ordinate federal, provincial and municipal land use policies as they relate to provincial policies and programs.

### Rural District Planning

The study recommends the establishment of rural planning districts in the Province and the creation of District Planning Commissions for the preparation of comprehensive land use plans for each of these districts.

## Planning Coordination

The Study recommends that the Province accept shared responsibility in these three areas as follows:

Guidance - The Province, through the Cabinet Committee on Land Use, should develop land use policies to act as guidelines for local planning authorities.

Assistance - During the plan preparation period, the Department of Municipal Affairs should make available to district commissions the necessary staff and reliable data on resource capability to enable them to proceed with their task.

Monitoring - The Agricultural Land Planning Section of the Department of Agriculture and Rural Development should have the opportunity to assess and make recommendation on the agricultural components of the plans.

## Agricultural Land Zoning Objectives

The Agricultural Resources Study recommends that the following objectives be established by the Province with regard to the zoning of agricultural land:

1. Since New Brunswick has only a small amount of prime agricultural land, between 300,000 and 400,000 acres of prime class 2 land, the highest priority must be given to zoning all this land for agricultural purposes.

2. Since most of the agriculture in New Brunswick is on class 3 land, priority should also be given to zoning the majority of this land. Altogether, there are over 3 million acres.

3. It is difficult to justify zoning class 4 land for agricultural purposes since there is so much of it (approximately 5 million acres) and the need for it varies greatly from one region to another. Some of the factors which should be taken into account when deciding whether or not it should be preserved are:

    a) The kind and intensity of agricultural development in the region;

    b) The demand for this land for other purposes, such as forestry and urban development;

c) The physical characteristics of this land with respect to its suitability for specific crops and the ease with which it may be improved.

## Non-Resident Ownership

The Study recommends that such information should be obtained as soon as possible, for the accelerated trend of acquisition by non-residents, if left unchecked, could compromise the development of some of the best land resources in the Province.

## Corporate Ownership

The Study recommends, therefore, that corporations operating in the food production chain and involved in primary products be subject to the following regulations:

1. Every corporation engaged in farming or proposing to commence farming in the Province be required to file a report with the proposed Land Development Board stating the acreage involved, the commodities to be produced, the markets to be supplied and the role of the proposed farming operations in relation to the other activities of the Corporation.

2. Every corporation engaged in farming be required each year to file with the Board a report containing this information based on its operations in the preceding year and its status at year end.

3. Any newly locating corporation wishing to engage in primary production on acreages exceeding 500 be required to file an application with the Land Development Board setting out the reasons for the request. The Board may grant permission if it is satisfied that the acreage is necessary to the corporation's operation; that it will encourage the establishment or expansion of family farm operations; and that it is not sufficiently large as to exert undue influence on raw product prices or that it is satisfied that other mechanisms are in place to prevent such influence.

4. Every corporation involved in farming at the time of passing of appropriate legislation, especially those having in excess of 500 acres of land, be closely monitored by the Board to ensure that they do not use their production capacity to influence market prices at the primary level.

5. Based on the information contained in the annual reports of corporations to the Board and on any other relevant information, the Land Development Board should, five years after introduction of appropriate legislation, proceed with a comprehensive evaluation of the impact of these corporations on the physical environment, the rural community and the family farm. Depending on the findings of the evaluation, it may be necessary to introduce further measures.

## Land Consolidation

In order to remove one of the constraints to agricultural development, it is recommended that the Province undertake a land consolidation program. The main objectives of this program will be to:

1. Help farmers lease and/or acquire sufficient land of good capability and suitably located, to make their enterprise profitable.
2. Help new entrants into farming by acquiring, consolidating and developing high capability agricultural lands for the purpose of establishing farm units for subsequent lease or sale.
3. Contribute to maintaining rural communities by creating opportunities for people who may not otherwise have had the chance to establish and operate an effective farm.

It is recommended that land with good agricultural potential, purchased in the past by other government departments and agencies, should be transferred to the Agricultural Development Board for administration under the land consolidation program. Farmers leasing land under the present regulations of the Farm Adjustment Act or under other agreements or regulations should be brought under the regulations of the proposed land consolidation program over a five year period.

## Provincial Soil Survey Requirements

The Study recommends that the Land Planning Unit of the Department of Agriculture and Food, as a priority, undertake semi-detailed soil surveys to complement existing information and that only cleared areas be covered at a detailed scale.

## Co-ordination

It is recommended that the Federal-Provincial Soil Survey Committee be reorganized to make it more representative of the various departments concerned and be given the power to establish standards for any major soil surveys carried out in the Province.

## Required Legislation

In order to bring together the various programs and regulations aimed at conserving, developing and assisting in the improvement of agricultural land in New Brunswick, it is recommended that a Land Development Act be passed by the Legislature to bring under the administration of one act the following programs:

1. The Land Identification Program recommended in the Chapter on Land Development.
2. The Land Consolidation Program.
3. The regulations pertaining to the control of vertically integrated corporations involved in the field of primary agriculture.
4. The Community Pasture Program.

## Drainage

A comprehensive land drainage program for the Province is recommended.

## Land Clearing

A land clearing program is recommended to alleviate the short supply of good farmland in areas of intensive production.

## Land Identification

The Study recommends the implementation of a land identification program under which the following categories of land would be "identified" as agricultural land:

1. All land for which the government has made a grant for land improvement purposes under the proposed land improvement program in this chapter.
2. All actively farmed land which farmers care to have voluntarily identified.

## 8. Recommendations of the Third Report of the Select Committee of the New Brunswick Legislature On Rural Life and Land Use - 1977

- "An interdepartmental body be established at the Provincial level to co-ordinate policy-making with respect to the Provincial resource base." p. 51

- The interdepartmental body formulate a set of planning guidelines for the Province of New Brunswick which would provide a foundation for the more effective planning and development of provincial resources to attain the highest and best use for all the citizens of the Province. These planning guidelines should:

  a) provide a broad base for land and water resource development program;

  b) provide a background for local planning activity with informed public participation;

  c) provide a framework for the collection and organization of a good information base;

  d) provide a forum for co-operation between government departments whose programs impact on the planning process;

  e) provide for the more efficient use of existing government staff resources;

  f) provide a basis for the improved forward planning of major services (highways, power lines, etc.); and

  g) provide a framework for the consideration of major new land adjustment programs such as land banking and non-resident land purchase review. p. 56

- "The interdepartmental body comprise Deputy Ministers of all departments involved in resource use, supported by a working group of staff with sufficient experience and seniority to be able to speak on behalf of their respective Deputy Minister. To facilitate the effective operation of this body, access to technical support services will also be required." p. 58

- "To assist with the rural planning process and to help provide it with objectives other than just planning controls, planning guidelines be prepared at the provincial level which give definition on a map to the basic land use units in the settled areas of rural New Brunswick. These should include urban fringe, agricultural and marginal areas with a statement of broad provincial objectives for all three.

  Further, government investment in the improvement and management of private lands made in the context of the overall land use objectives of these rural land use units should be tied to ongoing use commitments on the part of the individual landholders." p. 65-66

- "Provision be made for flexibility in the minimum lot size requirements in certain rural areas of the Province. Such rural areas would include those on the outskirts of presently incorporated areas where annexation and provision of central services is likely to take place in the future." p. 67

- "The collection of improved soil and water information be given a much higher priority in the Province, and that staff and financial resources allocated to these activities be substantially increased." p. 67

- "A study be undertaken to investigate the true costs of urban sprawl and where these costs fall." p. 68

- "Regional planning commissions be appointed to foster the land use planning process at both regional and district levels. The planners who are directly involved in the process should be located within the area, have access to technical support staff and report directly to these commissions who would be provided with a budget to cover these costs." p. 69

- "The present boundaries of the Planning Regions in New Brunswick be examined with a view to defining other regions which conform more closely to local identities. Consultation with the people in this process should be an important factor in determining any new system of planning regions." p. 70

## 9. A Review - Community Planning Act, 1979

### William A. Cooper, B.A., L.L.B.

"It was determined in the spring of 1978 that the Community Planning Act, R.S.N.B., 1973 and amendments thereto, in its force and effect, had developed problems in terms of philosophy, administration and drafting and that an updating was required in order to bring the act into a contemporary position." P. 1

"An individual should have the basic right to use his property in any way he sees fit unless the government has a clear reason why he should not." P. 8-9

"A clear statement of planning policies and priorities on a provincial level should be developed in close liaison with those agencies or departments administering acts and regulations of the legislature and a revised planning act should provide the mechanism to enforce and encourage these policies and priorities." P. 9

"It is thus indicated that provincial planning would then include a system of 'monitoring' local jurisdictions to ensure that provincial interests are protected while at the same time offering assistance to local jurisdictions in the determination of their local problems." P. 11

"Reports and history also indicate that planning generally tends to be present oriented with lesser attention paid to the long-term effects of planning decisions." P. 12

"...the Community Planning Act should co-ordinate planning activity throughout the province by identifying resources and establishing constraints of a provincial nature allowing each area or municipality to co-ordinate its own planning given local resources and constraints." P. 14

Summary of Recommendations

1. Regional planning be abolished.
2. Statutory planning committees be abolished.
3. Planning by districts be mandatory for all cities and surrounding areas.

4. Single lot subdivisions be authorized without a plan of survey.
5. Development officers be upgraded in planning skills and become agents for other departments involved in the planning process.
6. The provincial act establish provincial priorities and delegate local issues to municipalities including residual power.
7. In terms of drafting, the provincial act should deal with incorporated and unincorporated areas separately.

## 10. A Study on Sprawl in New Brunswick

## Comay Planning Consultants Ltd., 1980

Recommendations:

a) It is recommended that the Province develop and adopt an explicit policy statement on rural and fringe development in the Province which defines the overall Provincial goals with respect to rural and fringe development, and a co-ordinated policy statement which defines specific Provincial objectives in dealing with rural and fringe development.

   Specifically, it is recommended that:

   i) the role of co-ordinating the development of the policy statement from the detailed objectives be performed by a central agency of the Provincial Government which has no direct functional responsibility and, therefore, is in a position to deal with individual statements from an overall perspective.

b) It is recommended that the Province delineate a set of Priority Zones within which the Province will exercise a greater degree of control over rural and fringe development.

   (zones around Moncton, Saint John, Fredericton and Bathurst).

c) It is recommended that the Province establish a Development Framework for each Priority Zone to serve as a policy context within which the effective regulation of development can take place.

d) It is recommended that the Province adjust the planning process in the unincorporated areas of the Province to facilitate the use of subdivision control as a planning tool.

e) It is recommended that the Province establish an information system to ensure that all pertinent data on development is available to the relevant authorities at the appropriate times, and a monitoring and evaluation procedure to periodically review the impact of such developments, and the effectiveness of the actions taken.

f) It is recommended that the Province institute a set of pilot programs to test and evaluate the recommended approach for dealing with rural development.

g) It is recommended that the Province review the procedures for acquiring land in rural areas for public purposes to determine whether the acquisition of land for recreation amenities or schools can be facilitated and the administrative implications of such action.

It is recommended that the Province consider increasing the supply of competitive lots through septic tanks development inside municipalities in locations that are remote from foreseeable servicing program.

## 11. Agricultural Land Use Task Force, 1981

### (Recommendations Concerning Governmental Organization)

The Agricultural Land Use Task Force recommends that:

1. OFFICIALS COMMITTEE ON LAND USE POLICY

   The recently organized Officials Committee on Land Use Policy be continued.

2. CABINET COMMITTEE ON LAND USE POLICY

   There should also be organized a Cabinet Committee on Land Use Policy, which should be chaired by the Minister of Agriculture, and the Officials Committee on Land Use Policy should report to this Cabinet Committee.

3. LAND BRANCH, NBDA & RD

   A Land Branch should be organized in the Department of Agriculture, to centralize service to the agricultural industry related to the land resource base. Included in this Branch should be the existing services provided by the Agricultural Land Planning Section of the Engineering Branch, the Farm Land Identification Program, the soil survey and Agrometeological/climatological survey of Plant Industry Branch, and Farm Land Resource Planning and Management Specialists.

4. LAND USE ADVISORY COUNCIL

   There should be established a Land Use Advisory Council comprised of representatives of non-government organizations with interests in land use, and other concerned individuals to advise the Cabinet Committee on Land Use Policy.

5. GOVERNMENT POLICY REVIEW

   The provincial government should review its policies and programs in order to identify where and how its activities influence the use of private and public land and the evolution of land use patterns. Such reviews should be conducted by the individual departments with reports being submitted through the Officials Committee on Land Use Policy to the Cabinet Committee on Land Use Policy.

## 6. LEGISLATIVE COMMITTEE ON RURAL LIFE AND LAND USE

The Legislature Committee on Rural Life and Land Use should be re-established to provide a continuing forum for public input to the Legislature.

## (Agricultural Land Use Policy Recommendations)

## 1. LAND RESEARCH AND INVENTORIES

The provincial government should co-operate with the federal government in the provision of a coordinated program of surveys, and socio-economic, scientific and technical research on land capability, characteristics, tenure and use. This should be done through programs of both inter-governmental and inter-departmental cooperation.

Surveys and research in the fields of:

- topographic mapping
- cadastral mapping
- soils mapping and interpretation of data
- climate mapping and interpretation of data
- current land use mapping, analysis and monitoring of change
- evaluation of land capability for agriculture and forestry
- collection of socio-economic data relating to land use
- water surveys

are key elements in the formulation of sound land management strategies and should be added to as required. Particular attention should be paid to the development of the inter-departmental and inter-governmental organization of data handling systems to enable efficient use to be made of research results and collected data.

## 2. LAND RESOURCE INFORMATION

The provincial Government should co-operate with the federal Government in the provision of information to the public on the land resource and its use as a primary means of achieving wise management of this resource and its efficient use for economic development.

Current and accurate information should be central to decisions made by land owners. The activities of provincial departments should be coordinated among themselves and with the federal government so that the required information is provided in the most effective and efficient manner.

## 3. HAZARD-PRONE LANDS

The provincial government should discourage inappropriate use of hazard-prone lands such as those subject to floods, erosion, slumping, and other man-made or natural hazards.

Present programs to identify potential risk areas should be continued. Particular consideration should be given to the use of flood-prone lands for agriculture.

## 4. FOREIGN OWNERSHIP

The provincial government should make changes in the land registration and information system to enable the acquisition of accurate information on the amount and location of land being held and purchased by non-residents of the province and the extent to which this land is being productively utilized or left idle.

The provincial government has the jurisdiction over foreign ownership of natural resources. Should data indicate that the foreign ownership of New Brunswick land has a detrimental effect on the existance and development of agriculture in the province the provincial government should take action to rectify this situation.

## 5. FARM LAND IDENTIFICATION PROGRAM

Adjustments should be made in the Farm Land Identification Program to provide more incentive for land owners to put land with agricultural capability into production, and less for owners who are not using their lands productively.

Presently the F.L.I. Program offers the same incentive to all land owners to preserve their land with agricultural capability but does not offer any greater incentive for those who put their land into production than for those who leave it idle.

## 6. URBAN SPRAWL

The provincial Government should undertake to assemble the necessary data to accurately measure, in quantitative terms, the effect of urban sprawl on agricultural land.

This was not done by the recent "Study on Sprawl in N.B.", and this Task Force does not agree with the conclusions of that report that sprawl is not a problem.

## 7. RURAL PLANNING

The provincial Government should prepare a new act governing planning of rural areas of the province.

The present "Community Planning Act" is urban oriented and does not adequately provide for planning in rural areas.

## 8. REAL PROPERTY TAX AND RESIDENTIAL TAX CREDIT

The provincial Government should remove the residential tax credit on all housing so that services are paid for equally by farm and non-farm residents. At the same time taxes on farm buildings should depend on their worth in the productive process rather than their market value.

At present non-farm rural residents pay very little real property taxes for the services they receive while farmers pay a disproportionately large share, as they pay on the basis of the value of their buildings.

## 9. PROPERTIES SOLD AT TAX SALES

Regulations governing tax sales of agricultural land should be adjusted so as to give New Brunswick resident farmers first opportunity to purchase such lands and return them to productive use.

At present such lands may be sold to out-of-province buyers who may bid-up prices beyond the capacity of local farmers.

## 10. CROWN LANDS

The present Department of Natural Resources policy, that the Crown is a residual supplier of land, should be made more flexible to allow land with agricultural capability to be sold, (through the Farm Adjustment Board) to New Brunswick farmers who show, through their farm plan, that they will put that land into agricultural production.

This should be in addition to the present "trade" policy.

11. BLUEBERRY LEASES

The new policy on the leasing of Crown lands for blueberry production is a great improvement over the previous policy and should be continued.

12. AGRICULTURAL PRIORITY AREAS

The provincial Government should designate Agricultural Priority Areas in the province. In these areas, agriculture should be recognized as the primary land use and priority should be given to the requirements of agriculture over other uses.

Any non-agricultural activities by government agencies or activities receiving government assistance should have to show that there is no other available land for their activities before they would be allowed to use agricultural land within an Agricultural Priority Area for other than an agricultural use.

Persons building residences within Agricultural Priority areas should be informed that they were in an area where agriculture had priority. The rights of such residents to make complaints concerning nuisances from agricultural operations (such as noise and smell) should be limited (to those of health and safety only).

The development of agricultural activity within such designated areas should receive priority in order that efficiencies may be achieved in the provision of infrastructure and services to the agricultural industry.

13. LOCAL GOVERNMENT

There are many activities and services of government which are better supplied by local rather then provincial government. There is need for the re-establishment of local governments in the unincorporated areas of New Brunswick to perform some of these functions.

## 12. Controlled Access Highway Study

### Fenco Consultants Ltd., 1981

"An individual should have the basic right to use his property in any way he sees fit unless the government has a clear reason why he should not... all of which suggests that guidance from the Provincial government is necessary with respect to planning and development in unincorporated areas."

"This guidance might manifest itself in the formulation of a comprehensive set of integrative land use policies, developed by an interdepartmental policy development committee, to serve as terms of reference for land use planning in unincorporated areas."

"In the interest of traffic safety, and in an effort to protect its highway system and investment, the Department of Transportation has assumed the senior role with respect to subdivision applications in unincorporated areas, as well as the lead role in matters where an access to a provincial route is involved."

"Although the Community Planning Act appears to provide adequate legislative mechanisms for implementing land use plans for development control purposes, it is clear that such mechanisms must be implemented more fully."

"Transportation planning and land use planning should not be separate independent processes. An integrated approach is imperative in unincorporated areas, particularly so in the periphery of urban centres."

Recommendations:

5. "Formulate a set of Provincial Land Use Policies which: reconciles individual departmental policies; can result in repeal of conflicting practices or policies which are inconsistent; and provides current comprehensive guidelines for the Province's development."

6. Area plans for unincorporated areas of the Province should be developed.

7. D.T. should use DMA planning expertise for new projects in unincorporated areas.

## 13. LAND USE AND THE ENVIRONMENT IN NEW BRUNSWICK

Summary of a report to the Hon. Eric J. Kipping, Minister of the Environment by the Environmental Council of New Brunswick October 1981. John M. Henderson, Chairman.

Our analyses have led us to draw a number of conclusions which are enumerated here.

1. Environmental damage is caused much more by the way land is treated during use than by the fact that it is used.
2. The most significant problem is loss of prime agricultural and forest land to urban sprawl and erosion.
3. The environmental damage thus incurred also results in economic and social losses.
4. We must develop a method of auditing the environmental effects of current policies that affect land use and of commonly applied land use practices.
5. The term "land use planning" is equated in the public's perception with government interference in everyday decisions on what may be grown, where, etc. This is a misconception. Planning is done for a variety of purposes from setting long-range policy to making day-to-day management decisions.
6. The provincial Government should provide leadership at the strategic levels of planning while leaving the owners responsible for tactical decisions for municipalities, industries, farms and woodlots.
7. Land use planning falls into four separate spheres: community planning, resource management planning, network planning and environmental planning. Responsibilities for there areas should not be confused, although co-ordination is necessary and important.
8. Landowners have wide discretionary powers over the use of their land but they do not have all-inclusive rights on it and they have no right to abuse it.

9. Environmental planning and environmental protection, including prevention of the abuse of land, are the responsibility of the Minister of the Environment. Some new and strengthened initiatives are needed in order to satisfy this obligation.

10. We believe that the great majority of land-owners, who carefully husband their land and do not abuse it, will concur with these conclusions.

11. However, if prime agricultural land is to be retained in agriculture, a way must be found for the farmer to have a decent retirement income.

NEW BRUNSWICK FEDERATION OF AGRICULTURE
1982 ANNUAL MEETING
JANUARY 12 AND 13, 1982
FREDERICTON, NEW BRUNSWICK

POLICY PAPER

# AGRICULTURAL LAND USE

## BACKGROUND

The New Brunswick Federation of Agriculture has maintained and initiated interest in the land use issue since the 1981 Annual Meeting. Much of the activity has been the result of the general mandate of the Federation to be involved in land use matters, flowed from 1981 Annual Meeting direction, and responding to Government activity, some of which resulted from NBFA request.

A Land Use Task Force was created in early 1981 to explore the land use topic with emphasis toward policy development for New Brunswick. Participants upon the task force were four farmers representing the NBFA and its member organizations and a knowledgeable land use policy representative of the Department of Agriculture. The task force called upon informed resource people from other land base resource departments of New Brunswick in order to gather as much information as possible.

The Land Use Task Force completed its mandate with the tabling of a report at the Summer Policy Session meetings with the Minister of Agriculture held in August. Additionally, an internal report was tabled with the Minister of Agriculture by the Department of Agriculture land use representative. This procedure was part of the procedure agreed to upon entering into the Task Force format.

Of the areas explored and the recommendations made to the NBDA and in turn, Government, those of importance and which have been implemented pertain to governmental organization. Of the five recommendations made, two have been implemented and a third has been somewhat accomplished to date. These are: 1) that an officials committee on land use policy be established; this is both the Deputy Ministers' Committee, agriculture, municipal affairs, natural resources, and environment and a new land use task force comprised of officials seconded from each of the aforementioned departments; 2) that Government land use policy in aggregate be reviewed; primarily by those departments that relate to the land base, and; 3) that a Cabinet Committee on Land Use Policy be established - presently the Cabinet Committee on Economic Development is acting in this capacity.

Within the past three months, the NBFA has been requested by farmers to address the matter of corporate ownership of agricultural lands particularly those with the potential to be linked with food processing capability to complete an integration that runs contrary to the desire of having agricultural commodity production the result of independent family farm business activity as the primary source of food and fibre. To some extent, concern about the entry of foreign capital entering the New Brunswick land and agricultural production unit capital markets can be included in this same discussion. The negative results are: 1) a general bidding up of land values causing local buyers to be excluded because of transaction prices; 2) the often witnessed selling-buying-reselling activity that results in bidding up of land values but also causes institutional concerns about farm structure as well as use of the land for production purposes; 3) assessement of land as a result of higher transaction prices affecting neighbouring farm units, and; 4) inability to lease or rent land adjacent to transacted parcels because of inadequate fiscal policy that encourages use rather than the present day approach that emphasizes preservation.

Presently, the NBFA is conducting land use activities in the form of a land use committee that reports to the Board of Directors. This committee is composed of four farmers and land use resource people called to sit upon the committee. Further, it can be reported that the drafting of a provincial land use policy is being actively pursued by the new Land Use Task Force and will be referred for Government action some time in the future.

It is from the various meetings and the work of the Land Use Committee that this policy paper is submitted for review and dependent upon amendments and final reception, whether or not the NBFA will submit the farmer requests for positive change to the provincial government.

## NEW BRUNSWICK FEDERATION OF AGRICULTURE APPROVED POLICY TARGETS FOR A NEW BRUNSWICK LAND USE POLICY

- That the family farm is to be the basic agricultural production unit; that is independent family business structure.

- That land capable of supporting agricultural production be used to its fullest extend regardless of present day tenure patterns, but future ownership patterns must be conducive for the continuation of the family farm production unit as the basis for production of food and fibre.

- That present day lands with agricultural capability, enrolled or not enrolled in the Farm Land Identification Program be induced into production or use through the application of fiscal policy tools (assessment and taxation).

- That a system of designation for agricultural lands be established under existing or new legislation that will enable the following:

    - preserve land for future use
    - cause a compatible relationship between recreational land and farm land and their use
    - land to be identified and its use monitored
    - land valued to be equated with normal returns to agricultural production and these values are to be used within the provincial assessment and taxation system
    - the creation of a new municipality or the expansion of the boundaries of existing municipalities that involves farm land should be subject to review by a public agency that is composed in part of active farmers (NBFA representatives) which is authorized by government to hear and render final decision upon land use matters in a customary public hearing process that includes socio-economic, agricultural production and marketing, and farm land conservation and preservation impact assessments
    - any farm land now or in the future incorporated into a municipality should be provided the intended policy benefits of the Farm Land Identification Program and the benefits arising from any other land use policies that may arise in the future
    - any new construction other than farm construction or related farm construction erected outside of a municipality will not be eligible for the Residential Relief Property Tax Act provisions

- That the provincial government implement use valued assessment for land.

    - the government of New Brunswick assess all lands at market value. Those enrolled in FLIP or those identified from time to time as agricultural lands be deferred of real property tax.

    - the government of New Brunswick tax land through property taxation at $1.50 per $100 of assessment applied to the assessed value; non-agricultural market value or agricultural value (enrolled in FLIP or otherwise identified]

    - farm land located within a municipality and enrolled in FLIP will be deferred of tax for provincial and municipal taxation purposes

- That farmers not be faced with undue restrictions associated with agricultural practices but simultaneously farmers will attempt to subscribe and undertake agronomic practices pertaining to soil quality and soil conservation.

It is hoped that NBFA Annual Meeting support can be converted into Government of New Brunswick support. Given this fact, it is further assumed that stemming from the policy statements will be programs under existing or new legislation and regulation that will cause the attainment of the land use targets. It is the mix of existing and perhaps required new legislation and regulation that can bring about the maintenance of an agricultural land base that can support a viable agriculture industry for the Province, based upon the family farm production unit.

# RECOMMENDATIONS FROM PREVIOUS STUDIES

## (Land Use Planning)

The study recommends the establishment of rural planning districts in the Province and the creation of District Planning Commissions for the preparation of comprehensive land use plans for each of these districts.

Agricultural Resources Study,
1977.

An inter-departmental body formulate a set of planning guidelines for the Province which would provide a foundation for the more effective planning and development of provincial resources to attain the highest and best use for all the citizens of the Province.

Third Report of the Select
Committee of the New Brunswick
Legislature on Rural Life and
Land Use. 1977.

## Recommendation from Previous Studies

It is recommended that the entire province be brought under community planning. Cities and towns should be permitted to continue their own planning agencies with the approval of and in accordance with the regulations of the provincial planning branch.

Royal Commission on Finance and
Municipal Taxation, 1963.

The planned use of land is a matter of paramount importance . . . rational planning of the use of forest resources can be accomplished only within a framework of comprehensive land use planning.

Forest Resources Study, 1974.

The Board recommends that the organization responsible for water management introduce a system of overall land use zoning and regulation through formal inter-agency liaison and negotiation.

Saint John River Basin Board
1975.

The study recommends the establishment of rural planning districts in the Province and the creation of District Planning Commissions for the preparation of comprehensive land use plans for each of these districts.

Agricultural Resources Study,
1977.

An Interdepartmental body formulate a set of planning guidelines for the Province which would provide a foundation for the more effective planning and development of provincial resources to attain the highest and best use for all the citizens of the Province.

Third Report of the Select
Committee of the New Brunswick
Legislature on Rural Life and
Land Use. 1977.

## Recommendations from Previous Studies

Eleven planning districts be established under the Community Planning Act and that the boundaries of such districts be the outside boundaries of the eleven rural municipalities with all existing cities, towns and villages located therein to be included in the planning districts.

Task Force on Non-Incorporated
Areas in New Brunswick 1976.

The study recommends the establishment of a Cabinet Committee on Land Use and that the responsibility of this Committee be to:

1) Initiate and recommend land use policies,
2) Co-ordinate the land use planning activities of the various government departments and agencies involved as managers and as users of land;
3) Develop land use guidelines for local planning authorities, and
4) Provide leadership in the total field of land use.

The Committee should be supported by a secretariat to be located within the Cabinet Secretariat.

Agricultural Resources Study,
1977.

## Recommendations from Previous Studies

The provincial branch (Community Planning) should administer a plan covering all territory which does not fall under the jurisdiction of a city or a town which has its own planning programme.

Royal Commission on Finance and
Municipal Taxation, 1963.

We propose the appointment of a Land-Use Planning Board under the chairmanship of a Member of the Legislature with a full-time Deputy Chairman who should be a professional planner . . . the Board should be empowered to lay down basic, but binding, guidelines and priorities applicable to all land-use programmes in the Province and, in cases of merging or conflicting interests in land use, would become involved in harmonizing the uses and resolving conflicts . . . the Board should be responsible to the Premier.

Forest Resources Study, 1974.

A Land Use Planning Organization, with respresentation from all New Brunswick agencies with a concern for land or water management should be established to carry out overall land use planning. The Organization should report at Cabinet level.

Saint John River Basin Board
1975.

## Recommendations from Previous Studies

An interdepartmental body be established at the Provincial level to co-ordinate policy-making with respect to the Provincial resource base. The interdepartmental body comprise Deputy Ministers of all departments involved in resource use, supported by a working group of staff with sufficient experience and seniority to be able to speak on behalf of their respective Deputy Minister. To facilitate the effective operation of this body, access to technical support services will also be required.

Third Report of the Select
Committee on Rural Life and
Land Use 1977

The Community Planning Act should co-ordinate planning activities throughout the Province by identifying resources and establishing constraints of a provincial nature allowing each area or municipality to co-ordinate its own planning, given local resources and constraints.

A Review - Community Planning
Act 1979.

There should also be organized a Cabinet Committee on Land Use Policy, which should be chaired by the Minister of Agriculture and the Officials Committee on Land Use Policy should report to this Cabinet Committee.

Agricultural Land Use Task Force
1981

# APPENDIX D

## APPENDIX D

## WHAT IS A POLICY?

A Policy is

1. A guide for making administrative decisions;
2. An organisation's point of view;
3. An established way of doing business and directing actions in specified areas of management;
4. An internal administrative law governing executive actions within the organization.

A policy may be stated orally, or in writing.

A Policy is not

1. An order, a directive, or a command;
2. A procedure, a system, or a method, as such.

A Policy does

1. Clarify management viewpoints and philosophies within designated areas of operation;
2. Provide a pattern within which administrative delegation of authority may be expedited and controlled;
3. Establish latitudes and guides within which authorized persons may make administrative decisions and effect action;
4. Anticipate future conditions and situations, and resolve how they will be dealt with;
5. Foster a favorable management climate; produce a feeling of confidence in making administrative decisions; expedite decisions; encourage executive self reliance, growth and development, and the improvement of executive performance.

Source: Carlson Dirk. Modern Management: Principles and Practices. Organization for Economic Co-operation and Development, 1962.

# APPENDIX E

# APPENDIX E

## PROVINCIAL STATUTES AFFECTING LAND USE

Page

1. Provincial Statutes Affecting Land Use and its Planning E1
2. Early Land Grant Conditions (1786) E4

# APPENDIX "E"

## PROVINCIAL STATUTES AFFECTING LAND USE AND ITS PLANNING

The following section briefly summarizes the various pieces of provincial legislation that affect or could have an affect on land use. To put this list into some kind of perspective, we have organized the major pieces of legislation under the heading of the various departments or government agencies that administer these statutes.

### AGRICULTURE

Exercises an influence on land use through the promotion of agriculture by a variety of extension and land improvement programs. With the help of the Dept. of Municipal Affairs, it has sponsored the Farm Land Identification Program (FLIP) which attempts to preserve agricultural land through property tax deferral.

- Agricultural Association Act
- Agricultural Rehabilitation and Development Act
- Drainage of Farm Lands Act
- Farm Adjustment Act
- Fences Act
- Keswick Islands Act
- New Brunswick Grain Act
- Marshland Reclamation Act
- Potato Disease Eradication Act

### COMMERCE AND DEVELOPMENT

The Department, through its promotion of industrial parks and industrial development, has an influence on the location of industries in the Province with implications on the land use surrounding these developments.

- Industrial Development and Expropriation Act

### COMMUNITY IMPROVEMENT CORPORATION

Has the authority through its Act to undertake a variety of land planning and management functions.

- Community Improvement Corporation Act

### EDUCATION

Importance of school location and curriculum to a community's development has long been recognized.

- Schools Act

### ENVIRONMENT

Has the responsibility for the water resources of the Province and administers various pollution control standards. Since 1975, the Dept. has also been responsible for the administration of the Province's environmental assessment procedures.

- Clean Environment Act
- Unsightly Premises Act

## HEALTH

Regulates for health reasons such aspects of land development as drainage, water supply and on-site waste disposal systems.

- Health Act

## HISTORICAL RESOURCES ADMINISTRATION

Responsible for the preservation of objects and sites of historical and anthropological value.

- Historic Sites Protection Act

## JUSTICE

Administers a variety of Acts regulating the acquisition and sale of land as well as the rights of property ownership in the Province.

- Condominium Property Act
- Expropriation Act
- Property Act
- Quieting of Titles Act

## MUNICIPAL AFFAIRS

Provides services to and administers various Acts dealing with both the incorporated municipalities and the unincorporated areas of the Province. The basis for land use planning is found in the Community Planning Act. (7 regional plans, planning districts and municipal plans)

- Assessment Act
- Community Planning Act
- Control of Municipalities Act
- Municipalities Act
- Municipal Capital Borrowing Act
- Municipal Debentures Act
- Mobile Homes Act

## NATURAL RESOURCES

Plays a very important role in the management of the Province's land resource. It has the responsibility for forest management, Crown lands, mining exploration and development as well as for the protection of the Province's fish and wildlife.

- Abandoned Lands Act
- Bituminous Shale Act
- Crown Lands and Forests Act
- Dams and Sluiceway Act
- Ecological Reserves Act
- Mining Act
- Oil and Natural Gas Act
- Ownership of Minerals Act
- Pipeline Act
- Quarriable Substances Act

## N. B. HOUSING CORPORATION

Manages a variety of public housing projects, various housing programs and has been involved in assembling land for both public and private projects.

- New Brunswick Housing Act

## N. B. ELECTRIC POWER COMMISSION

Has an impact on land use through the development of electrical energy production facilities and the Province's transmission grid.

- Electric Power Act

## PUBLIC WORKS

Responsible for the construction of various provincial public works projects.

- Public Works Act

## TOURISM

Manages all aspects of provincial park development and their use. Also has indirect effects on land use through its promotion of the provincial tourism industry.

- Hotels Act
- Parks Act
- Tourism Development Act

## TRANSPORTATION

Plans, builds and maintains the provincial road network. The development of the Province's road system which has significant impact on land use, particularly around major urban areas.

- Highways Act

## N.B. LAND GRANTS AND DEVELOPMENT

Attached are excerpts from a 1786 Grant Document. These relate to (1) what was granted and (2) the conditions of the Grant mostly related to development.

NEW BRUNSWICK,

GEORGE the Third by the Grace of GOD of Great-Britain, France and Ireland, KING, Defender of the Faith, and so forth do give and grant unto... together with all Woods, Underwoods, Timber and Timber Trees, Lakes, Ponds, Fishings, Waters, Water Courses, Profits, Commodities, Appurtenances and Hereditments whatsoever thereunto belonging or in any Wise appertaining; together also with the Privilege of Hunting, Hawking and Fowling; and upon the same, and Mines and Minerals; SAVING and reserving NEVERTHELESS to us, our Heirs and Successors, all White Pine Trees, if any such shall be found growing thereon, and also SAVING and reserving to us, our Heirs and Successors all Mines of Gold, Silver, Copper, Lead and Coals, TO HAVE AND TO HOLD the said... upon Condition that the said Heirs or Assigns shall and do within three Years after the Date hereof for every fifty Acres of Plantable Land hereby granted, clear and work three Acres at least, in such Part thereof as or they shall judge most convenient and advantageous; or else clear and drain three Acres of Swampy or Sunken Ground, or drain three Acres of Marsh, if any such contained therein. AND shall and do within the Time aforesaid, put and keep upon every fifty Acres thereof, accounted Baren, three Neat Cattle, and continue the same thereon, until three Acres for every Fifty be fully cleared and improved, and if there shall be no Part of the said Tract fit for present Cultivation without manuring and improving the same or they within the Time aforesaid shall be obliged to erect on some Part of the said Land, one good Dwelling House, to be at least Twenty Feet in Length and Sixteen Feet in Breadth, and to put on the said Land the like Number of three Neat Cattle for every fifty Acres; or otherwise if any Part of the said Tract shall be Stony or Rocky Ground, and not fit for Planting Pasture, shall and do within three Years as aforesaid, begin to employ thereon and continue to work for three Years then next ensuing, in digging any stony Quary or Mine, one good and able Hand for every fifty Acres, it shall be accounted a sufficient Cultivation and Improvement; PROVIDED also, that every three Acres that shall be cleared and worked, or cleared and drained as aforesaid, shall be accounted a sufficient Spring, Cultivation and Improvements to save forever from Forfeiture Fifty Acres of Land in any Part of the Tract hereby granted;...

GIVEN under the Great Seal of our Province of New Brunswick,

WITNESS our Trusty and Well-beloved Thomas Carleton Esquire our Captain General and Governor in Chief, in...

# APPENDIX F

# LAND USE AT PRESENT

Although present land use is known in some detail locally, there is remarkably little information available for the Province as a whole.

There are two main categorizations of Land Use in the Province, by Department of Natural Resources developed for Forest Management purposes, and by Department of Municipal Affairs developed for Properties Assessment purposes. There are differences between them.

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| 2. | Present Land Use Categories Compared | F2 |
| 3. | Extracts from New Brunswick Forest Inventory | F3 |
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| 11. | Agricultural Blocking | F27 |
| 12. | Land with Agricultural Potential in Blocks, over 500 acres | F28 |
| 13. | Cleared Land | F29 |

## What do we do with it? "LAND"

Own it.
Buy it.
Cultivate it.
Fertilize it.
Plough it.
Irrigate it.
Protect it.
Modify it.
Drain it.
Spray it.
Grade it.
Seed it.
Blast it.
Harvest it.
Weed it.
Till it.
Rent it.
Tax it.
Survey it.
Mortgage it.
Improve it.
Pave it.
Erode it.
Waste it.
Ignore it.
Talk about it.
Scarify it.

Work it.
Play on it.
Test it.
Build on it.
Wet it.
Soak it.
Dig it.
Pile it.

## LAND USE CLASSIFICATIONS

### DEPARTMENT OF MUNICIPAL AFFAIRS, Assessment Branch

| | Per Cent of Total | Thousands of Hectares |
|---|---|---|
| TIMBERLAND TOTAL | 81.3 | 5,962.5 |
| Crown | 41.0 | 3,004.6 |
| Government owned | 2.8 | 203.4 |
| Freehold | 29.5 | 2,168.2 |
| Farm Woodlots | 8.0 | 586.3 |
| FARMLAND (1978) | 4.4 | 322.4 |
| Other (estimated) | 14.3 | 1,049.0 |
| TOTAL (estimated) | 100.0 | 7,333.9 |

### DEPARTMENT OF NATURAL RESOURCES, Forest Inventory

| | | |
|---|---|---|
| FOREST LAND TOTAL | 86.8 | 6,327.8 |
| Small Freehold | 29.1 | 2,120.5 |
| Large Freehold | 15.6 | 1,136.2 |
| Crown | 42.1 | 3,071.1 |
| CLEARED LAND TOTAL | 6.7 | 490.9 |
| Cultivated | 4.7 | 343.3 |
| Occupied | 2.0 | 147.6 |
| OTHER (Water, Wasteland & Federal) | 6.5 | 473.0 |
| TOTAL AREA | 100.0 | 7,291.7 |

# EXTRACTS FROM: NEW BRUNSWICK FOREST INVENTORY

"This is a Federal-Provincial Development Project, funded under the Forestry Subsidiary Agreement of the Canada - New Brunswick General Development Agreement by the Government of New Brunswick and the Department of Regional Economic Expansion"

DEPARTMENT OF NATURAL RESOURCES
FOREST MANAGEMENT BRANCH
1981

# INTRODUCTION

The first complete inventory of New Brunswick forest land was initiated in 1951 and completed in 1958. A report of this inventory was published in 1958. (N.B. Forest Inventory, A Summary Report). In 1968 a second inventory of all forest lands was completed and although results of this inventory were available, no formal report was published.

By 1974 the demand for wood fiber in N.B. had increased by 32% compared to 1968 and an updated and modified inventory is a necessary base for planning the management of New Brunswick forests. In 1974 funds were made available through the Federal-Provincial forestry sub-agreement. Field work was initiated in 1975 and completed in 1979. This report presents the results of the inventory.

Interpretation of 1:20 000 scale black and white aerial photos provided the basis for type maps for all forest land in the Province. Area and volume summaries by inventory strata (cover type, height class, maturity group, volume class, and species association) were constructed. Ground sampling provided volume estimates by species, diameter class and grade (quality) in each of the strata.

The inventory is intended for use in planning and policy making by both public and private agencies but must be supplemented for use in forest management operations as the estimates given are only valid for relatively large areas.

All measurements and calculations were made in Metric SI units. A number of tables of area and volume are converted to Imperial units to facilitate the comparisons with previous inventories. All volumes are gross merchantable.

## SUMMARY OF RESULTS[1]

### AREA

The total area of the Province of New Brunswick is approximately 7 292 thousand hectares (18,019 thousand acres), of which 162.0 thousand hectares (400 thousand acres) are unclassified Federal lands. The remaining area is 85 percent productive forest land, 6 percent nonproductive waste land, 7 percent cleared land and 2 percent water.

Approximately 48 percent of the 6 080 thousand hectares (15,024 thousand acres) of productive forest land in the Province is in Crown ownership. This ranges from 77 percent in Resource Region 1 to 30 percent in Resource Region 4.

Private lands account for 52 percent of the Provincial productive forest land. The area of private lands is highest in Resource Region 4 which has 70 percent and is lowest in Resource Region 1 with 23 percent.

The softwood (S) cover type makes up 38 percent of all forest land assigned to cover types with Resource Region 2 having the highest (50 percent) concentration. The hardwood cover type represents 14 percent of all cover types and the remaining 48 percent is mixed-wood cover types.

### VOLUME

#### *Softwood*

The total volume of softwood in the Province of New Brunswick is 337.1 million cubic metres (119.0 million cunits; 65 percent of total gross merchantable volume). Spruce and fir together represents 82 percent of the gross merchantable softwood volume.

The distribution of spruce-fir volume varies considerably by Resource Region, with Resource Region 5 having the highest concentration, averaging 61.2 cubic metres per productive hectare (8.7 cunits per acre), and Resource Region 3 having the lowest volume, at 32.0 cubic metres per productive hectare (4.5 cunits per acre).

The distribution of balsam fir is equally variable across the Province, ranging from a low of 5.0 cubic metres per productive hectare (0.7 cunits per acre) in Resource Region 3 to a high of 39.4 cubic metres per productive hectare (5.6 cunits per acre) in Resource Region 5.

Spruce volume (47 percent of the total softwood volume) ranges from 17.0 cubic metres per productive hectare (2.4 cunits per acre) in Resource Region 1 to 34.2 cubic metres (4.9 cunits) in Resource Region 2.

Cedar comprises 10 percent of the total softwood volume. Thirty-seven percent of the cedar volume is found in Resource Region 4 where the volume is 8.5 cubic metres per productive hectare (1.2 cunits per acre). In contrast, Resource Region 3 contains 1.2 cubic metres per productive hectare (0.2 cunits per acre).

White pine, another commercially important species is distributed in all Resource Regions ranging from 0.5 cubic metre per productive hectare (0.1 cunits per acre) in Resource Region 5 to 2.7 cubic metres (0.4 cunits) in Resource Region 2. The total provincial supply of white pine is estimated as 11.6 million cubic metres (4.1 million cunits).

#### *Hardwood*

The total volume of hardwood species in New Brunswick is 178.7 million cubic metres (63.1 million cunits). This volume is composed of 24 percent red maple, 20 percent sugar maple, 13 percent yellow birch, 14 percent white birch, 18 percent poplar, 9 percent beech and 2 percent other hardwood species such as ash, elm, ironwood, and red oak.

Regionally red maple ranges from 11.0 cubic metres per productive hectare (1.6 cunits per acre) in Resource Region 4 to 3.9 cubic metres (0.6 cunits per acre) in Resource Region 1.

The volume of sugar maple, the more commercially valuable of the two maple species is highest in Resource Region 5.

White birch is distributed in all Resource Regions but is most abundant in Resource Region 4. The total provincial supply is 25.8 million cubic metres (9.1 million cunits).

Poplar, a commonly occurring commercial hardwood species, is found in all forest Regions. By volume, it is the third ranking hardwood species with a total provincial supply of 31.5 million cubic metres (11.1 million cunits).

#### *Grade*

It is important to know the distribution of volume by tree size and grade because the sawmilling industry usually requires wood in the larger diameter classes and of a higher grade than the pulpwood industry.

The volume of log size (26+cm DBH) spruce is approximately 62.1 million cubic metres (21.9 million cunits) for the Province. The inventory of log size spruce ranges from 17.6 million cubic metres (6.2 million cunits) in Resource Region 4 to 6.7 million cubic metres (2.4 million cunits) in Resource Region 1. However, only a certain percentage of this is of log quality. Log quality (tree grades I and II) spruce grade percentages range from 37 percent of gross merchantable volume in Resource Region 4 to 58 percent in Resource Region 5.

Log size (26+cm DBH) balsam fir ranges from a low of 1.1 million cubic metres (0.4 million cunits) in Resource Region 3 to a high of 13.0 million cubic metres (4.6 million cunits) in Resource Region 5.

White pine logs are found throughout all Resource Regions and with the exception of Resource Region 5 total volumes are similar for each Region.

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[1] Bracketed figures are approximate Imperial Units.

### *Distribution by Ownership*

Average softwood volumes are lowest on small freehold ownership (38.7 cubic metres per productive hectare, 5.5 cunits per acre) and are highest on Crown land (65.4 cubic metres, 9.3 cunits) with large freehold having an average volume of 60.3 cubic metres per hectare (8.6 cunits).

Volume per productive hectare in log size softwood (26 + cm DBH) is 12.3 cubic metres (1.8 cunits per acre) on small freehold, 24.3 cubic metres (3.5 cunits per acre) on Crown land and 27.4 cubic metres (3.9 cunits per acre) on large freehold.

# COMPARISON OF 1958, 1968 AND 1979 INVENTORIES[1]

Two inventories by Inventory District were conducted in New Brunswick, one in 1958 and one in 1968 (Figure 1). The methods in each of these inventories differed from the methods used in the 1979 inventory. The earlier inventories used a double sampling technique to determine estimates of area and volume. In 1958 a classification was made of the uniform condition at the centre point of each aerial photograph covering the Province; in 1968 a grid of 10 points was superimposed over the effective area of each photograph and two points randomly selected to locate the homogeneous condition to be classified. The proportion of points in each specified stratum was used to determine estimates of strata areas. A sub-sample of the forest stands designated by the photo points was randomly selected for ground measurements to provide estimates of volume by species and diameters.

The 1979 inventory indicates significant changes in the forest of New Brunswick since the first two inventories were conducted (Appendix V). These changes reflect to some degree the general aging of the forest and the decline in softwood volume, the increase in area of hardwood species that have regenerated from cutting operations and a decline in the fir component of the softwood forest because of mortality from spruce budworm defoliation. Some apparent changes in forest conditions may be due to different methods used in the inventories.

Following is a discussion of some of the major changes which have taken place over the past 20 years.

## AREA

There is an apparent decrease of 0.4 percent in the total area of the province between 1958/68 and 1979. in 1956 the Federal Department of Mines and Technical Surveys provided an area estimate using a combination of 1:20 000 and 1:50 000 maps. The 1979 area figure was derived from the 1:20 000 type maps.

The 1979 areas from the 1:20 000 type maps are the better estimates since they were derived from a complete measurement of all map conditions, while the 1958 estimates were computed from the number of sample points that fell in specific conditions.

### *Cover Type*

The area of softwood has increased in Inventory Districts 1 and 5 (Tables 6 and 26) as a result of the restocking of older burns with softwood species, reforestation efforts by Government and Industry and higher concentrations of softwood species in some of the stands formerly classified as mixed-wood. The area of softwood has decreased in Inventory Districts 2, 3 and 4 (Tables 11, 16 and 21) and is most prominent in Districts 3 and 4 where the softwood cover type has decreased by about 30% and 35% respectively since 1958. This change is probably related to the serious spruce budworm problem which has existed in southern New Brunswick over the last 25 years resulting in a loss of balsam fir. The high loss of softwood in southern New Brunswick has resulted in a slight decline for the Province (Table 1).

The area of mixed-wood has decreased in Inventory Districts 1 and 5(Tables 6 and 26) and increased in Inventory Districts 3 and 4 (Tables 16 and 21), with District 2 remaining fairly constant (Table 11). The increase in mixed-wood area in Districts 3 and 4 may be due to the loss of the softwood component from mixed-wood stands as a result of spruce budworm defoliation, over maturity and the harvesting of the softwood component from softwood stands leaving a low volume mixed-wood stand condition. The large increase in mixed wood area in Inventory Districts 3 and 4 have resulted in an increase of mixed-wood area for the Province (Table 1).

The pure hardwood cover type area has remained essentially the same over the past 20 years in Inventory District 1 (Table 6) while it has increased in all other Districts (Table 11, 16, 21 and 26). The increase in hardwood area may be a result of increased hardwood regeneration following cutting operations in mixed-wood stands, the removal of the softwood component in mixed-wood stands and by spruce budworm defoliation especially in Inventory Districts 3 and 4. The forest area by cover type is summarized in Figure 2.

### *Maturity Group*

On a provincial basis the area of forest for New Brunswick in maturity groups I and II increased while the areas in maturity groups III and IV decreased (Table 1). This pattern exists for each Inventory District.

There has been a decrease in the burned area in New Brunswick from approximately 600 thousand acres in 1958 to 67 thousand acres in 1979 (Table 1). This pattern exists for each Inventory District and results from increased efforts in forest fire suppression, natural restocking and reforestation of many of the burned areas.

## VOLUME

### *Softwood*

The merchantable total volume of softwood species on a Provincial basis increased by 6.4 million cunits between 1958 and 1979. Compared to 1968, however, the total volume of softwood species has decreased by 18.5 million cunits. These changes reflect to some degree the age structure of the forest (going from an immature condition in 1958 to a mature condition in 1968 and slightly overmature in 1979), increased mortality due to the spruce budworm and increased levels of harvesting.

The decrease in total volume of softwood species between 1968 and 1979 should not be interpreted as an unhealthy condition. A large proportion of the softwood forests were in the mature age class in 1968 thus giving a high total inventory. The total inventory of softwood could be expected to decline by 1979 assuming no cutting or budworm mortality because of natural mortality in these older age classes. If the softwood forests were composed of equal areas of young and old age classes (ideal condition) the softwood inventory could be reduced to approximately 1/2 the 1979 lèvel. This type of forest would in fact permit a higher annual sustainable harvest than is presently possible because of faster growth and less natural mortality.

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[1] Tables and figures for this section are located in Appendix V.

The merchantable volume of balsam fir has decreased from 51.5 million cunits in 1958 to 44.7 million cunits in 1979 for New Brunswick (Table 4). Inventory Districts 2, 3 and 4 (Tables 14, 19 and 24) show a decline in balsam fir volume while Districts 1 and 5 (Tables 9 and 29) show an increase in balsam fir volume due to generally favourable conditions for balsam fir growth and a much lesser degree of budworm damage. The reduction of balsam fir volume is the result of repeated spruce budworm attack and increased harvesting of these stands.

A large percentage of the forest land in Inventory Districts 3 and 4 is located within the one mile buffer zone which has not been protected since 1976. An assessment of spruce and balsam fir on small freehold ownership in 1979 showed that 43% of the balsam fir was dead or moribund (Clowater and Andrews, 1979). These figures are reflected in the present inventory where the volume of balsam fir in Inventory District 3 has been reduced from 2.2 cunits per acre in 1968 to 0.8 cunits per acre in 1979 (Table 20) and in Inventory District 4 where balsam fir volume was reduced from 3.1 cunits per acre in 1968 to 1.9 cunits per acre in 1979 (Table 25). It is expected that the volume of balsam fir will continue to drop over the next several years as a result of the budworm attack and increased harvesting to remove the balsam fir before it dies.

The volume of spruce has remained fairly constant in all Inventory Districts except District 4 where it has increased from 4.0 cunits per acre in 1968 to 4.2 cunits per acre in 1979 (Table 25). This has resulted in an increase of 1.1 million cunits of spruce volume since 1968.

The volume of white pine, red pine, jack pine, cedar, hemlock and larch have all increased over the inventory period since 1958 (Table 4).

The volume of softwood for New Brunswick in maturity groups I and II increased over the inventory period while the volumes decreased in maturity groups III and IV (Table 3). This corresponds to the changes in the area of these maturity groups which was discussed previously.

The volume of softwood sawlogs (greater than 10 inches) for the Province (Table 5) has increased over the inventory period since 1958. The volume of sawlog spruce has increased in Inventory Districts 3 and 4 (Tables 20 and 25) and decreased in Inventory Districts 1, 2 and 5 (Table 10, 15 and 30). The volume of 10 inch and larger fir has decreased in all Inventory Districts as a result of overmaturity and budworm damage (Tables 10, 15, 20, 25 and 30).

### *Hardwood*

All species of hardwood have increased in volume in New Brunswick since 1958 (Table 4, Figure 3). It should be noted that although there is an overall increase in total hardwood, the volume of hardwood larger than 10 inches DBH has declined for all hardwood species except white birch and aspen (Table 4). This fact reflects the growing scarcity of hardwood veneer and sawlogs in New Brunswick.

Table 1 . Land classification (thousands of ha) by condition and ownership for New Brunswick.

| Condition Class | Private Land | | Crown Land | Total |
|---|---|---|---|---|
| | Small Freehold | Large Freehold | | |
| FOREST LAND | | | | |
| Productive | 2055.0 | 1097.0 | 2928.2 | 6080.2 |
| Non-Productive | 65.5 | 39.2 | 142.9 | 247.6 |
| TOTAL | 2120.5 | 1136.2 | 3071.1 | 6327.8 |
| CLEARED LAND | | | | |
| Cultivated | 338.5 | 1.6 | 3.2 | 343.3 |
| Occupied | 104.0 | 10.8 | 32.8 | 147.6 |
| TOTAL | 442.5 | 12.4 | 36.0 | 490.9 |
| WASTE LAND | 48.6 | 10.1 | 86.2 | 144.9 |
| FEDERAL LAND | | | | 162.1 |
| TOTAL LAND | | | | 7125.7 |
| WATER | | | | 166.0 |
| TOTAL AREA | | | | 7291.7 |

Table 1A. Land classification (thousands of ac) by condition and ownership for New Brunswick.

| Condition Class | Private Land | | Crown Land | Total |
|---|---|---|---|---|
| | Small Freehold | Large Freehold | | |
| FOREST LAND | | | | |
| Productive | 5077.2 | 2709.4 | 7237.1 | 15023.7 |
| Non-Productive | 161.6 | 97.2 | 352.8 | 611.6 |
| TOTAL | 5238.8 | 2806.6 | 7589.9 | 15635.3 |
| CLEARED LAND | | | | |
| Cultivated | 836.4 | 3.9 | 7.9 | 848.2 |
| Occupied | 257.0 | 26.7 | 81.0 | 364.7 |
| TOTAL | 1093.4 | 30.6 | 88.9 | 1212.9 |
| WASTE LAND | 120.2 | 25.2 | 213.1 | 358.5 |
| FEDERAL LAND | | | | 400.8 |
| TOTAL LAND | | | | 17607.5 |
| WATER | | | | 410.3 |
| TOTAL AREA | | | | 18017.8 |

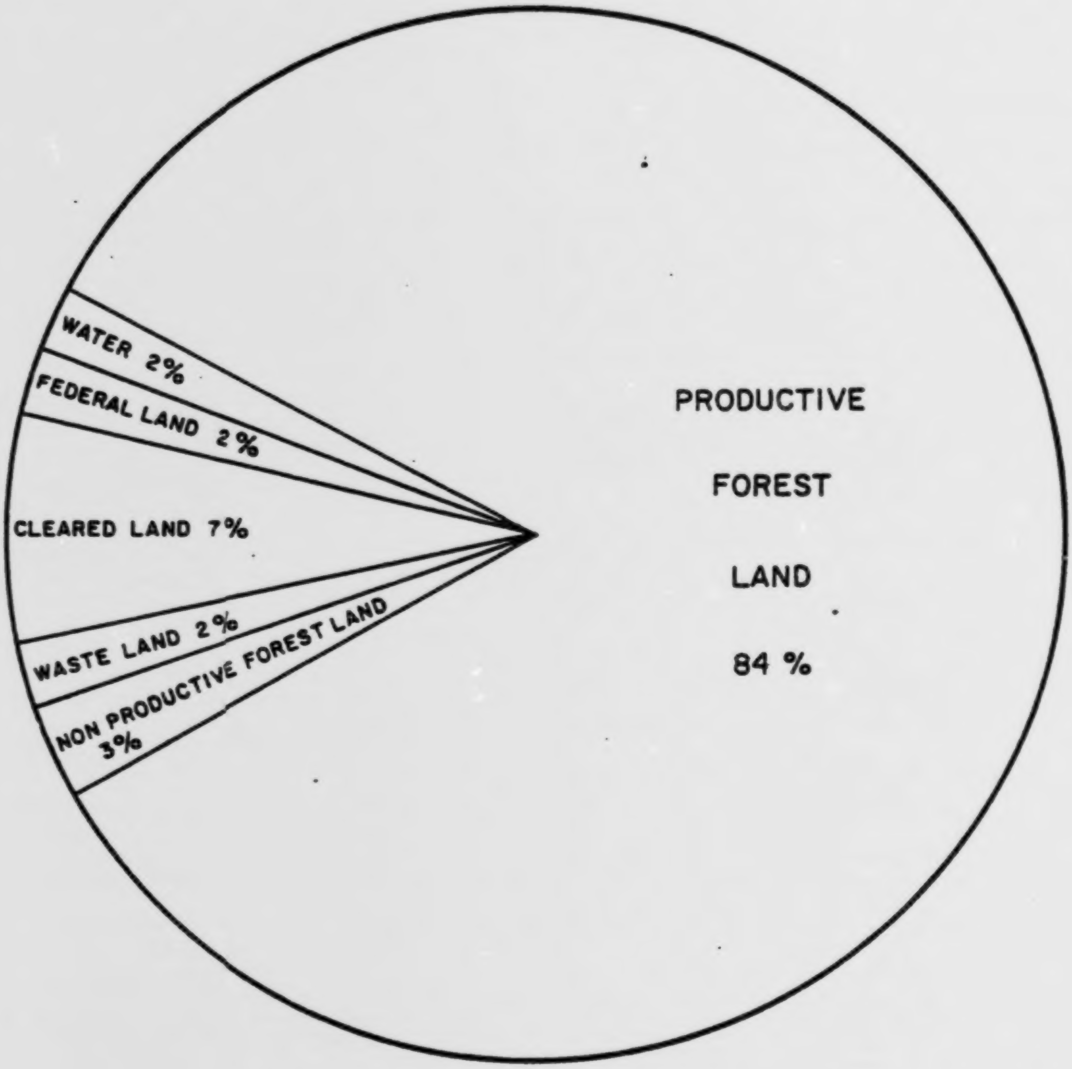

Figure 3. Total area by condition class for New Brunswick.

# APPENDIX I
# DEFINITION OF TERMS

The following definitions were taken from, "A Guide to Canadian Forest Inventory Terminology and Usage" (Bonnor, 1978) and those with asteriks were taken from the "New Brunswick Forest Inventory: A Summary Report" (Province of New Brunswick, 1958).

**Breast Height**: The standard height, 1.30 m above ground level, at which the diameter of a standing tree is measured;

**Burn**: Land which has recently been burned.

**Clearcut**: An area of forest land from which all merchantable trees have recently been harvested.

**Cleared Land**: Land permanently cleared of trees, usually as a result of human activities (eg. cultivated land, roads, right-of-ways, railroads, powerlines, airstrips, gravel pits, mines, dikes, etc.)

**Cluster**: A sample unit (plot) comprising two or more sample elements (subplots).

**Cover Type**: Classification of the forest canopy based on the estimated proportion of volume in softwood and hardwood species. (See Appendix II for further information).*

**Crown Land**: Land that is the property of the Crown.

**Diameter Class**: Any interval into which the range of stem diameters of trees or logs is divided for classification and use.

**Forest Land**: Land primarily intended for growing, or currently supporting forest; Includes land not now forested, eg. clear cut lands and plantations.

**Productive**: Forest land that is capable of producing a merchantable stand within a reasonable length of time.

**Non-Productive**: Includes all areas with some forest tree cover but which are not capable of producing the minimum conditions for a merchantable stand within a reasonable length of time.

**Forest Management Unit**: An area of Forest Land managed as a unit for fiber production and other renewable resources.

**Forest Type**: A group of forested areas or stands of similar composition which differentiates it from other such groups.

**Forest Map**: A base map to which forest data have been added.

**Inventory**:

**Forest**: A survey of forest area to determine such data as area condition, timber volume and species, for specific purposes such as planning, purchase, evaluation, management or harvesting.

**Management**: A detailed, intensive inventory for management purposes, of an area managed as one unit

**Regional**: A detailed, extensive forest inventory for planning on a regional or provincial basis. Major forest types are usually mapped, with estimates given for each type. Precision estimates are given for total inventory volume.

**Maturity Group**: Refers to a forest classification, based on estimated volume and the proportion of that volume in various tree sizes. (See Appendix II for further information).*

**Occupied**: Refers to built up areas of residential, commercial, or industrial use and includes areas in roads, powerlines, railroads, airports, etc.*

**Old Field**: Refers to areas where forest reproduction is being established in unused fields or pasture.

**Point Sampling**: A method of selecting trees for measurement, and for estimating stand basal area, at a sample location or point sample.

**Prism**: An optical instrument used as an angle gauge, consisting of a thin wedge of glass which establishes a fixed (critical) angle of projection in a point sample.

**Private Land**: Crown granted (freehold) land held in the name of individuals or corporated bodies.

**Small Freehold**: Private land held in small individual blocks by private individuals and small companies who usually do not have wood processing facilities.

**Large Freehold**: Private land held in large blocks by wood processing companies.

**Pulpwood**: Trees that will yield logs suitable in size and quality for the production of pulp.

**Sample**: A sub-set of one or more of the sample units into which the population is divided, selected to represent the population and examined to obtain estimates of population characteristics.

**Sample Plot**: A sample unit or element of known area or shape.

**Sample Unit**: One of the specified parts into which the population has been divided for sampling purposes.

**Permanent**: Designed for remeasurement.

**Temporary**: Designed for measurement on one occasion only.

**Sampling**: The selection of sample units from a population and the measurement and/or recording of information contained therein, to obtain estimates of population characteristics.

**Non-probability**: Where sample units are not drawn within a known probability.

**Probability**: Where sample units are drawn with a known probability and thus amenable to statistical inference and analysis.

Stand: A community of trees possessing sufficient uniformity in composition, age, arrangement, or condition to be distinguishable from the forest or other growth on adjoining area, thus forming a silvicultural or management entity.

Stratum: A subdivision of a forest area to be inventoried. The division of a population into strata (stratification) is usually done to obtain separate estimates for each stratum (see Appendix II for further information).

Type Map: A map showing the distribution of various types such as vegetation, soil or site throughout a forest area.

Unmerchantable: Of a tree or stand that has not yet attained sufficient size, quality and/or volume to make it suitable for harvesting.

Volume: The amount of wood in a tree, stand or other specified area, according to some unit of measurement or some standard of use.

Gross Merchantable: Volume of the main stem inside bark excluding a 30 cm stump and to a 10 cm top diameter, including defective and decayed wood, of trees or stands.

Volume Table: A table showing the estimated average tree or stand volume corresponding to selected values of other, more easily measured, tree or stand variables.

Waste Land: Includes all other land which is not forested. Examples are open muskegs, rock outcrops, beaches and natural meadows.*

# APPENDIX II
# STRATA DESCRIPTION

## COVER TYPE

| | |
|---|---|
| S | More than 75% coniferous species by volume |
| SH | Between 50% and 75% coniferous species by volume |
| HS | Between 25% and 50% coniferous species by volume |
| H | Less than 25% coniferous species by volume |

## HEIGHT CLASS

| | |
|---|---|
| 1. | 0-4 metres (0-13 feet) |
| 2. | 5-8 metres (14-26 feet) |
| 3. | 9-12 metres (27-39 feet) |
| 4. | 13-16 metres (40-52 feet) |
| 5. | 17+ metres (53+ feet) |
| 6. | Uneven height class |

## MATURITY GROUP

| | |
|---|---|
| I | More than 70 m³/ha (10 cu. per acre); most of the volume in the 26+cm (10+in.) DBH class |
| II | More than 35 m³/ha (5 cu. per acre); most of the volume in the 16-24 cm (6-9 in.) DBH class |
| III | Less than 70 m³/ha (10 cu. per acre); most of the volume in the 26+cm (10+in.) DBH class |
| IV | Less than 70 M³/ha (10 cu. per acre); most of the volume in the 10-14 cm (4 and 5 in.) DBH class |

## VOLUME CLASS

| | |
|---|---|
| 1 | 0-35 cubic metres per hectare (0-5 cu. per acre) |
| 2 | 36-70 cubic metres per hectare (6-10 cu. per acre) |
| 3 | 71-105 cubic metres per hectare (11-15 cu. per acre) |
| 4 | 106-140 cubic metres per hectare (16-20 cu. per acre) |
| 5 | 141+cubic metres per hectare (21+cu. per acre) |

## SPECIES ASSOCIATION

| | |
|---|---|
| SF | Spruce and fir mixtures, more than 50% spruce |
| FS | Spruce and fir mixtures, more than 50% fir |
| WP | White pine |
| RP | Red pine |
| JP | Jack pine |
| EC | Cedar |
| EH | Hemlock |
| TL | Larch |
| TH | Tolerant hardwood - red maple, sugar maple, yellow birch, beech, etc. |
| IH | Intolerant hardwood - white birch and popular |

EXAMPLE: FOREST STRATA FOR S COVER TYPE

SI3, SI4, SI5
SII2, SII3, SII4, SII5 — Cover Type
SIII1, SIII2 — Maturity Group
SIV1, SIV2, SIV3 — Volume Class

F14
August 1982

# DEPARTMENT OF MUNICIPAL AFFAIRS

## Assessment Branch

The Assessment Branch has five basic land classifications; they are (1) Residential, (2) Commercial/Industrial, (3) Timberland, (4) Farmland and (5) a catch all for those that do not fit into the first four. There are many breakdowns of these classifications on an individual basis but the computer file does not recognize them, so all reports generated bring them back to the classes mentioned.

When land is entered on the computer file, timberland and farmland is entered as a number of hectares and the system calculates a predetermined value (and tax in some cases). When any other class is entered into the system it is entered as a land value only; there is no statement of land size.

The three categories with no stated land size are the (1) Residential, (2) Commercial/Industrial and (3) the catch all which includes farmland or timerland deemed by the Assessor to be held for commercial, industrial or residential purposes. It is normal that most residential and commercial/industrial lots are less than one hectare. Those parcels in this category that have excess land, have "Value" figures only and the area cannot be determined by computer.

The figures that can be determined from the computer file are as follows:

| | |
|---|---|
| Crown Timberland | 3,004,642 |
| Government owned Timberland other than Crown | 203,385 |
| Freehold Timberland | 2,168,172 |
| Farm Woodlots | 586,349 |
| Total Timberland | 5,962,548 |
| Farmland area (1978) (other than woodland) | 322,390 |
| Total area Timberland + Farmland | 6,284,938 |

Any other classification figure in the Assessment System cannot be counted because it is stored in computer by value and not by area.

It can be presumed that the remaining land area of the province is assessed in categories other than those listed above. There will be some land area that is not assessed at all; included in this "non-assessed" category will be all street and highway right of way, most land covered by water (ie. lakes and rivers) and those that are missed or in error on the Assessment roll.

The total area that can be counted on the assessment file is 6.285 million hectares as shown. The total estimated area of the province is 7.334, this leaves 7.334 million - 6.285 = 1.049 million hectares that will be assessed under some classification other than woodland or farmland or not assessed at all for reasons stated above.

At the present time it is impossible for the Assessment Branch to provide definitive figures on this remaining 1.049 million hectares.

## 1982

## NON-RESIDENT OWNERSHIP OF LAND

| | No. of Properties | No. of Hectares Farmland | Assessed Value | No. of Hectares Timberland | Assessed Value | Other Land Value | Total Assessed Value |
|---|---|---|---|---|---|---|---|
| Non-Resident of N.B. Under FLIP | 50 | 770 | $209,013 | 1,211 | $48,792 | | $257,805 |
| Non-Resident of Canada Under FLIP | 29 | 774 | $314,831 | 1,143 | $46,976 | | $361,807 |
| Total | 79 | 1,544 | $523,844 | 2,354 | $95,768 | | $619,612 |
| Non-Resident of N.B. | 6,576 | 3,540 | $590,923 | 52,414 | $3,008,502 | $13,231,914 | $16,831,339 |
| Non-Resident of Canada | 4,216 | 3,193 | $475,426 | 55,472 | $3,206,141 | $8,260,774 | $11,942,341 |
| Total | 10,792 | 6,733 | $1,066,349 | 107,886 | $6,214,643 | $21,492,688 | $28,773,680 |
| Grand Total | 10,870 | 8,271 | $1,588,693 | 110,240 | $6,310,411 | $21,526,868 | $29,393,292 |
| Change since 1981 | -5% | -12% | -8% | +1% | +3% | -22% | +6% |

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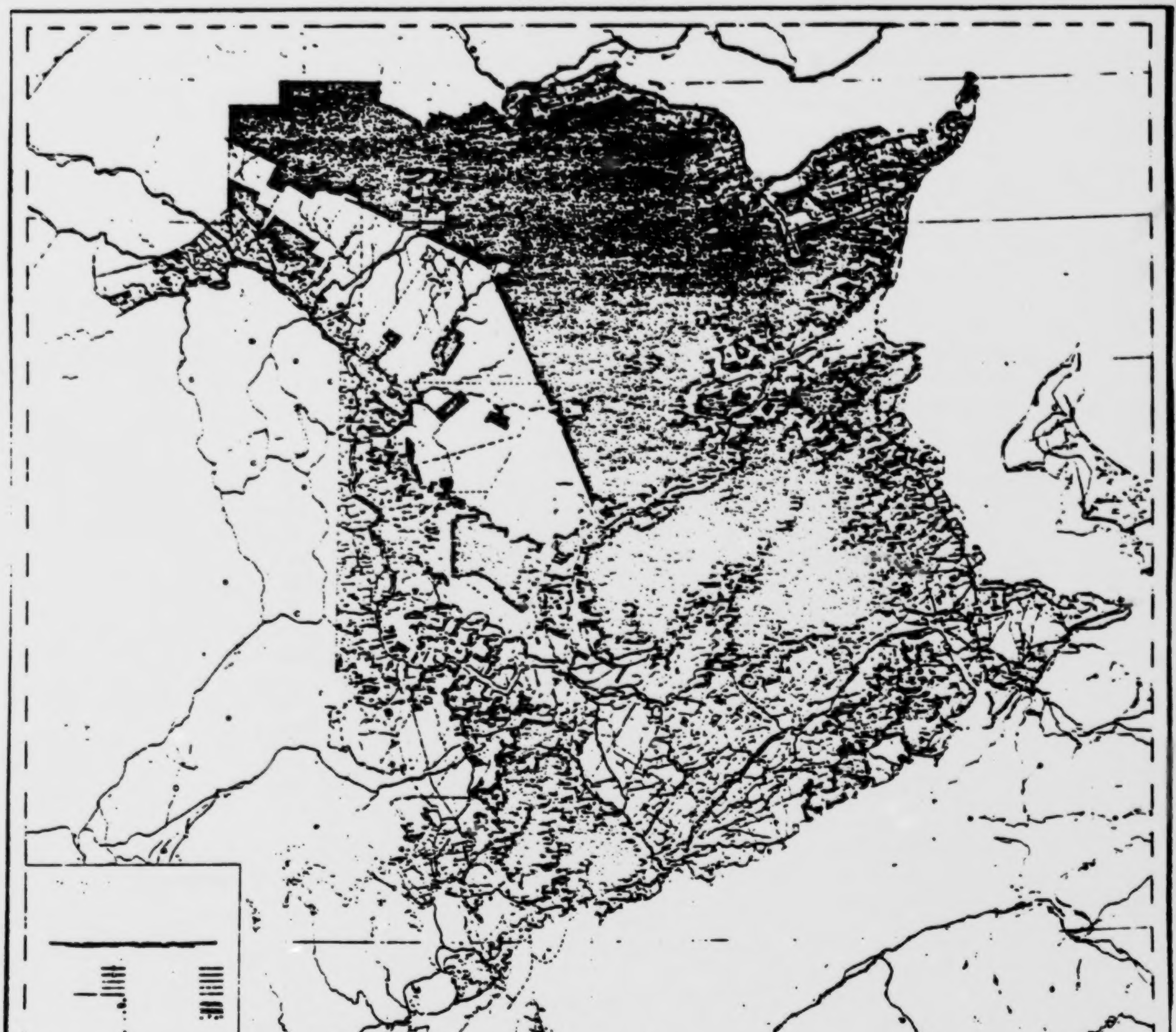
Note: A Non-Resident owner is defined herein as someone whose mailing address is outside the Province.

There could be others whose residence is outside the Province but who use an In-Province mailing address, lawyer or other agent and are therefore not included in these figures.

Source: Assessment Branch, Department of Municipal Affairs.

CROWN LAND



# CONTROL LINES AND CONTROLLED ACCESS IN N.B.

From: Controlled Access Highway Study

Control lines are conceptual lines on either or both sides of an arterial or collector highway. They are to be placed no further than 183m from the centre line of the right-of-way. Nothing can be constructed or placed here other than a fence or sign board, or an entrance way where a permit has been issued by the Minister of Transportation. This is in accordance with the Highway Act of 1973.

In having control lines, "development up to a distance of 183m from the centre line of the highway right-of-way is controlled" (Highway Act R.S.N.B. 1973)

Newly established control lines do not effect, existing buildings, erections, structures, storage tanks, gasoline pumps, sign boards, driveways, lumber or other objects lying between the centre line of the arterial highway or collector highway and the control line. To generalize, control lines stop all access and any development within its boundaries.

There is an exception to this law which states. "...upon being satisfied that the public interest is not adversely affected, the Minister may issue a permit, upon such conditions, in such form and for such term as he may prescribe, permitting a person to construct an entrance way onto a highway, for which a control line has been designated and he may, in his discretion, cancel any such permit.

Control of access, in the context of Canadian statutory law, is defined as, the condition where the right of access to a highway is controlled by public authority. The concept, which originates with the British, is based on three ideas--

1. public safety, --on a public facility which was developed at public expense;

2. promotion of the efficiency and convenience of transportation for the travelling public, both within and between communities; and

3. the benefits that the highway confers on roadside land.

In New Brunswick, the controlled access highway clause applies only to the land within the highway right-of-way while control apply to a distance of 183m from the centre line of the highway right-of-way.

The controlled access designation prohibits the construction, use, or even the permission of use of any private access to a designated highway. In the case of farm crossings, however, the Minister of Transportation may construct farm crossings over any highway ditch for the purpose of giving access to the travelled portion of a highway from lands abutting such highway. Also, the Lieutenant-Governor in Council may upon being satisfied that the public interest is not adversely affected and notwithstanding any recommendation of the Provincial Planning Committee, on the recommendation of the Minister of Transportation, by Order-in-Council authorize the Minister to issue a permit, in such form and subject to such fees terms and conditions as the Minister prescribes, permitting the doing of anything prohibited under this section; but the Minister may, in his discretion, cancel any such permit.

To summarize, access control is a tool used by highway authorities on the major elements of a highway system in the best interest of the total public; or, as stated by one authority, when '... necessary in the interest of public safety, convenience and the general welfare.' Formulation of a controlled access plan and policy must be based on careful economic and engineering research; and the law should reflect the best possible accommodation and reconciliation of the interests involved.

## CURRENT CONTROL LINES AND CONTROLLED
## ACCESS DESIGNATIONS ON N.B. ARTERIAL ROAD SYSTEM

| ROUTE | TOTAL LENGTH (km) | CONTROLLED ACCESS (ONLY) |  | CONTROL LINES (ONLY) |  | CONTROLLED ACCESS + CONTROL LINES |  |
|---|---|---|---|---|---|---|---|
|  |  | LENGTH (km) | % OF TOTAL | LENGTH (km) | % OF TOTAL | LENGTH (km) | % OF TOTAL |
| 1 | 180.555 | 27.334 | 15.1% | 11.003 | 6.1% | 132.938 | 73.7% |
| 2 | 553.000 | 9.780 | 1.8 | 62.152 | 11.3 | 417.444 | 75.4 |
| 7 | 105.182 | 46.682 | 44.4 |  |  |  |  |
| 8 | 245.780 |  |  | 2.673 | 1.1 | 0.853 | 0.3 |
| 11 | 414.439 | 161.371 | 38.9 |  |  | 32.895 | 7.9 |
| 15 | 73.001 | 30.624 | 42.0 |  |  | 34.975 | 47.9 |
| 16 | 52.030 |  |  |  |  | 52.030 | 100 |
| 95 | 14.935 |  |  |  |  | 14.935 | 100 |

| IN SUMMARY | LENGTH (km) | TOTAL % OF |
|---|---|---|
| 1. CONTROLLED ACCESS (ONLY | 275.791 | 13.0% |
| 2. CONTROL LINES (ONLY) | 75.828 | 3.6% |
| 3. CONTROLLED ACCESS & CONTROL LINES | 686.070 | 32.2% |
| 4. NO CONTROL | 1088.929 | 51.2% |

Source: Controlled Highway Access Study

## CURRENT CONTROL LINES AND CONTROLLED ACCESS DESIGNATIONS ON N.B. ARTERIAL ROAD SYSTEM

| ROUTE | TOTAL LENGTH (km) | CONTROLLED ACCESS (ONLY) |  | CONTROL LINES (ONLY) |  | CONTROLLED ACCESS + CONTROL LINES |  |
|---|---|---|---|---|---|---|---|
|  |  | LENGTH (km) | % OF TOTAL | LENGTH (km) | % OF TOTAL | LENGTH (km) | % OF TOTAL |
| 109 | 38.790 | 7.175 | 18.5% |  |  |  |  |
| 118 | 45.491 |  |  |  |  | 4.403 | 9.7% |
| 128 | 10.260 | 1.899 | 18.5% |  |  | 6.096 | 59.4% |
| 140 | 2.654 |  |  | 2.654 | 100% |  |  |

| SUMMARY | LENGTH (km) | TOTAL % OF |
|---|---|---|
| 1. CONTROLLED ACCESS (ONLY) | 9.074 | 0.4% |
| 2. CONTROL LINES (ONLY) | 2.654 | 0.1% |
| 3. CONTROLLED ACCESS + CONTROL LINES | 10.499 | 0.5% |
| 4. NO CONTROL | 2270.798 | 99.0% |

Source: Controlled Highway Access Study

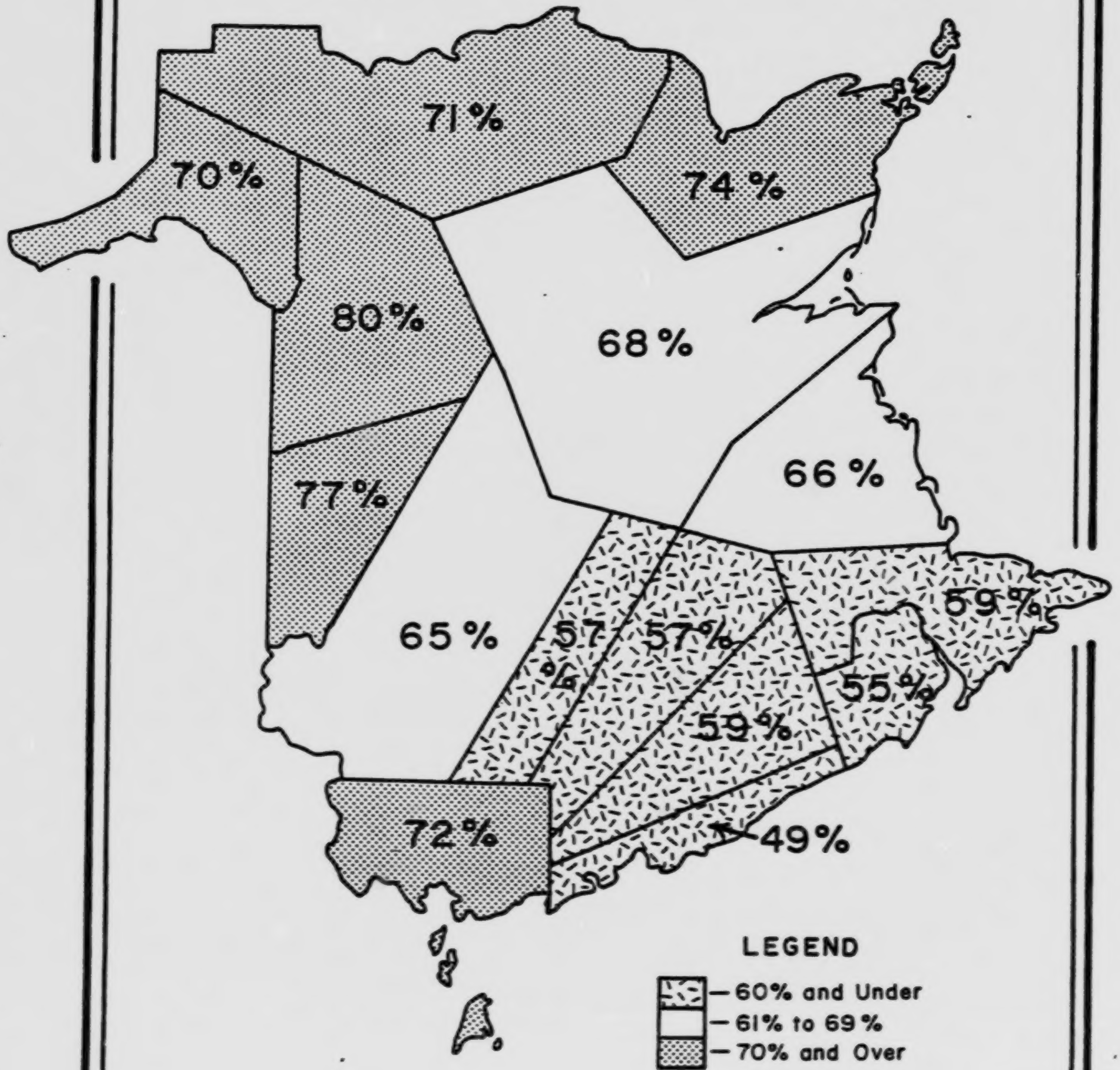
## SUMMARY OF CONTROL LINE PLANS (C.L.P.) FOR NEW BRUNSWICK HIGHWAY SYSTEM

| CONTROL LINE PLAN NO. | ROUTE NO. | DESCRIPTION | CONTROL SECTIONS (APPROXIMATE) | APPROXIMATE LENGTH (km) | AVERAGE SETBACK (m) | |
|---|---|---|---|---|---|---|
| | | | | | LEFT SIDE* | RIGHT SIDE* |
| ARTERIAL | | | | | | |
| 69.5 | 1 | Oak Bay to Saint John | 2(part) to 11(part) | 89.7 | 83 | 56 |
| 69.4 | 1 | Saint John to Sussex (removed Rothesay Road to Marr Road 1979) | 16(part) to 19 | 54.2 | 87 | 98 |
| 79.1 | 2 | Quebec Border to Grand Falls | 1 to 6 | 76.3 | 71 | 59 |
| 69.1 | 2 | Woodstock to Grand Falls | 7 to 16 | 123.4 | 100 | 104 |
| 69.2 | 2 | Bulls Creek to Mactaquac | 17 to 21(part) | 75.6 | | |
| 69.7 | 2 | Mactaquac to McKinley | 21(part) & 22(part) | 2.7 | 91 | 61 |
| 71.2 | 2 | Burton Bridge Approaches | 25(part) | 1.0 | 104 | |
| 71.1 | 2 | Loder Creek to Jemseg | 26(part) & 27 | 17.0 | 59 | |
| 69.3 | 2 | Junction Rte. 10 to Aulac | 30 to 43 | 183.6 | 59 | 68 |
| 71.5 | 8 | Renous Bridge Approach | 12(part) & 13(part) | 1.9 | 70 | 53 |
| 73.3 | 8 & 11 | Chatham Bridge Approaches | 17(part) & 11, respectively | 5.3 | 78 | 56 |
| 70.2 | 11 | Richibucto to St. Margarets | 7(part) to 9(part) | 29.2 | 68 | 79 |
| 72.1 | 15 | Kouchibouguac River to Ohio Road | 4(part) & 5(part) | 10.5 | Sections @ 0 & 183 | 144 |
| 72.1 | 15 | Port Elgin to Cap-Pele | 5(part) & 6 | 24.5 | 74 | 79 |
| 69.6 | 16 | Aulac to Cape Tormentine | 1 to 4 | 52.0 | 67 | 79 |
| 73.1 | 95 | Woodstock to U.S. Border | 1 | 14.9 | 67 | 133 |

| CONTROL LINE PLAN NO. | ROUTE NO. | DESCRIPTION | CONTROL SECTIONS (APPROXIMATE) | APPROXIMATE LENGTH (km) | AVERAGE SETBACK (m) LEFT SIDE* | AVERAGE SETBACK (m) RIGHT SIDE* |
|---|---|---|---|---|---|---|
| PROPOSED AMENDMENT TO C.L.P. 69-1: | | | | | | |
| Proposed Change | | | | | | |
| 79-2 | 2 | Carleton-Victoria County Line to Grand Falls | 7 to 11 | 53.9 | 83 | 113 |
| Existing | | | | | | |
| 69-1 (part) | 2 | Carleton-Victoria County Line to Grand Falls | 7 to 11 | 53.9 | 91 | 113 |
| COLLECTORS | | | | | | |
| 70-3 | 118 | South Nelson Bypass | 1(part) | 4.4 | 61 | 64 |
| 71-4 | 128 | Berry Mills to Moncton | 1(part) | 6.1 | 63 | 71 |
| 70-1-A | 140 | Ohio Road | 1 | 2.7 | 46 | 46 |

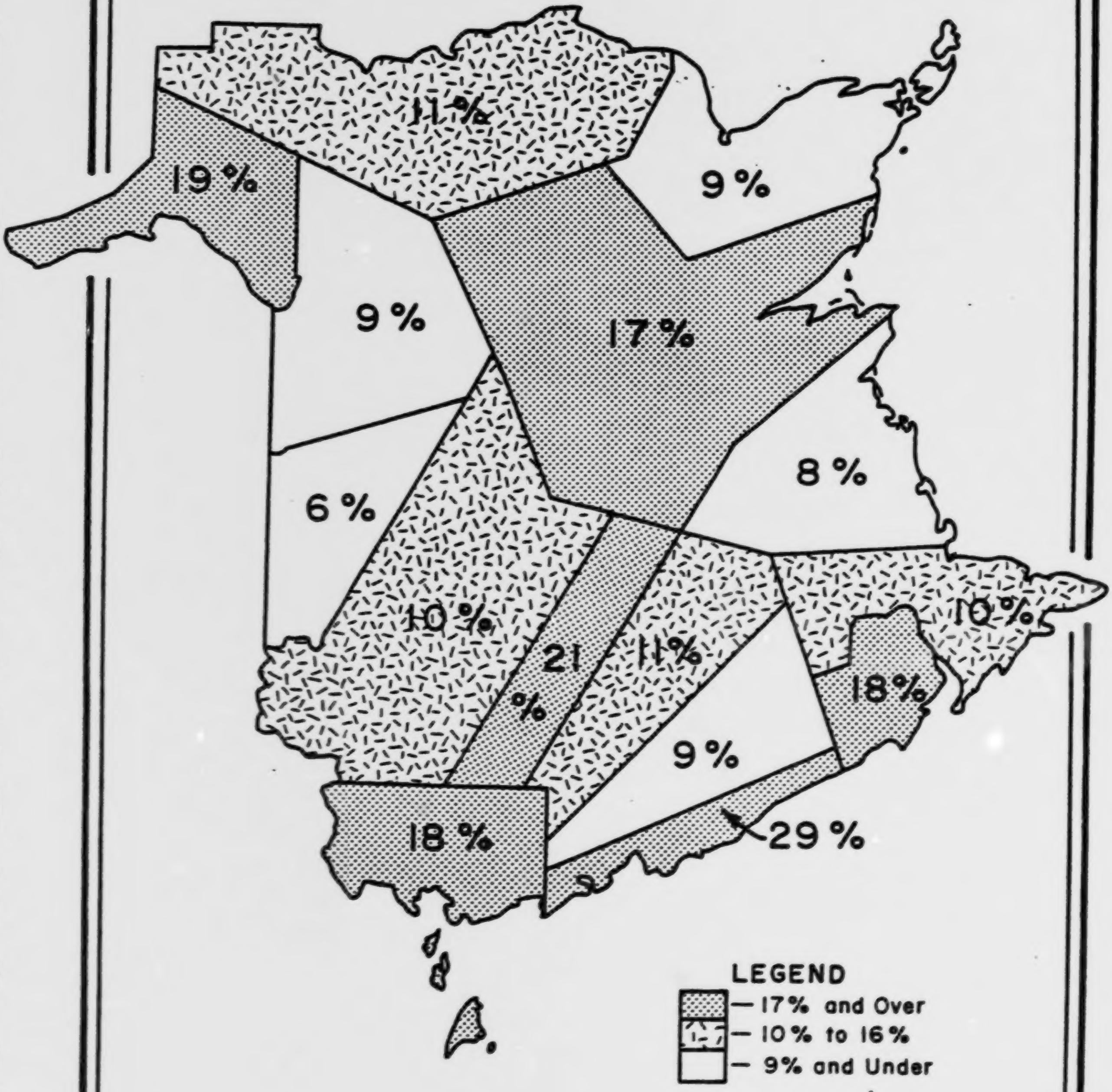
Source: Controlled Access Highway Study

## PROPORTION OF FARMLAND UNDER CROPS IN 1981 BY COUNTY


71%
70%
74%
80%
68%
66%
77%
59%
65%
57%
57%
55%
59%
72%
49%
LEGEND
▨ — 60% and Under
☐ — 61% to 69%
▩ — 70% and Over

Source : 1981 Census

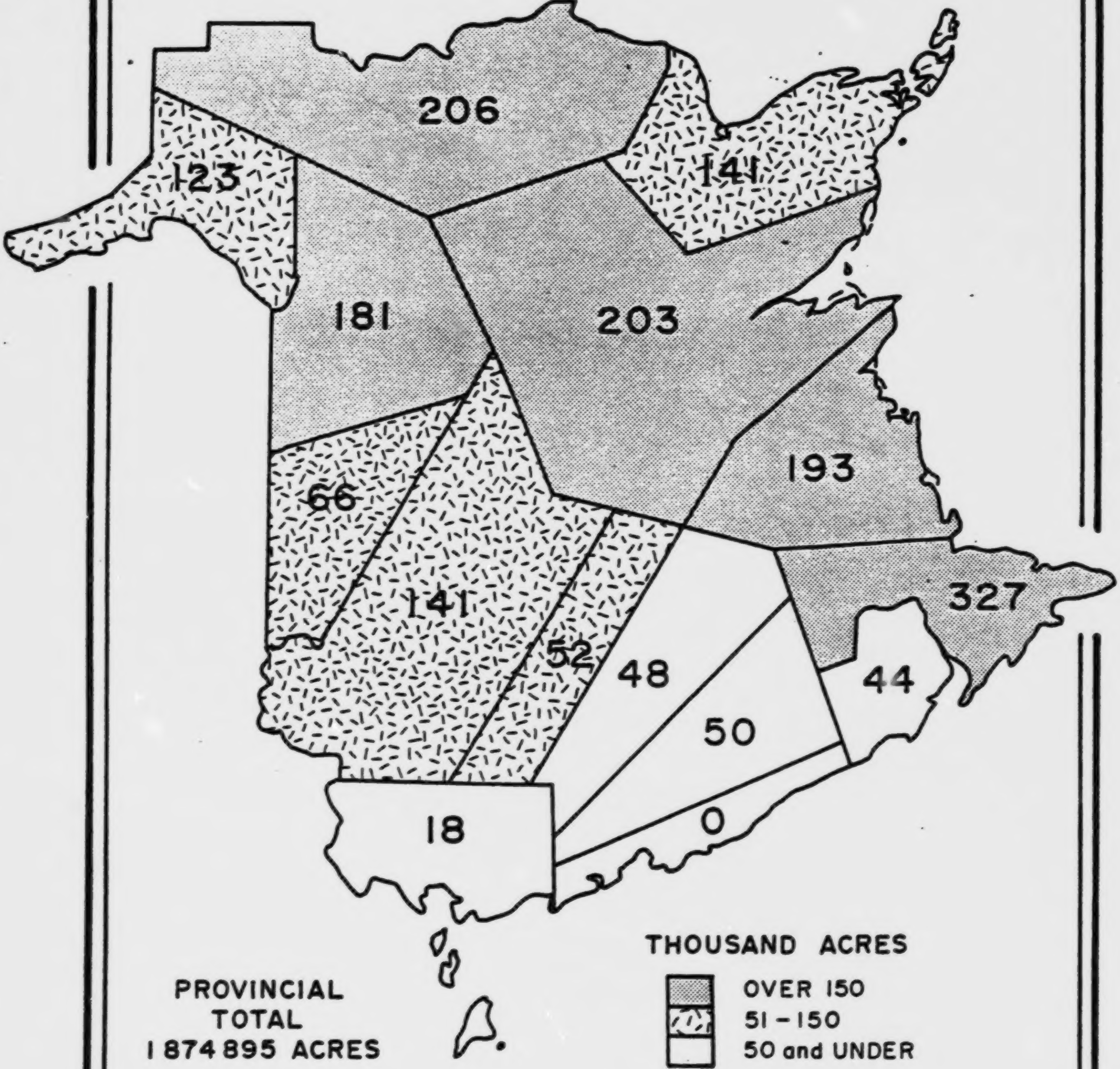
# PROPORTION OF FARMLAND UNUSED IN 1981 BY COUNTY


11%
19%
9%
9%
17%
8%
6%
10%
21 %
11%
10%
18%
9%
18%
29%
LEGEND
— 17% and Over
— 10% to 16%
— 9% and Under

Source : 1981 Census

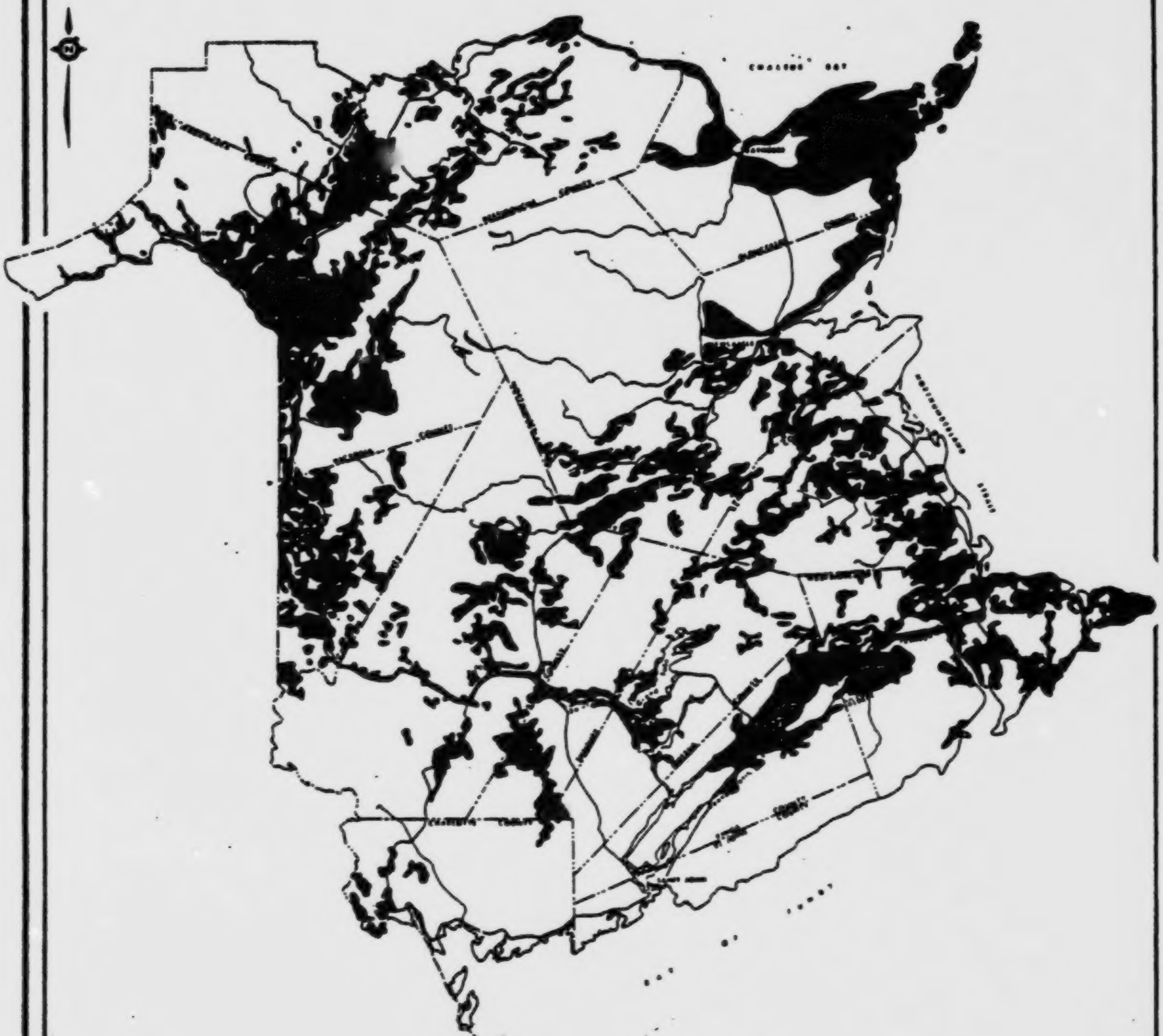
POTENTIAL ADDITIONAL AGRICULTURAL LAND BY COUNTY

*Class 2 & 3 blocked land not now in use*


206
123
141
181
203
66
193
141
52
48
327
44
50
18
0
PROVINCIAL TOTAL 1 874 895 ACRES
THOUSAND ACRES
OVER 150
51 – 150
50 and UNDER

Sources : Canada Land Inventory and 1981 Census

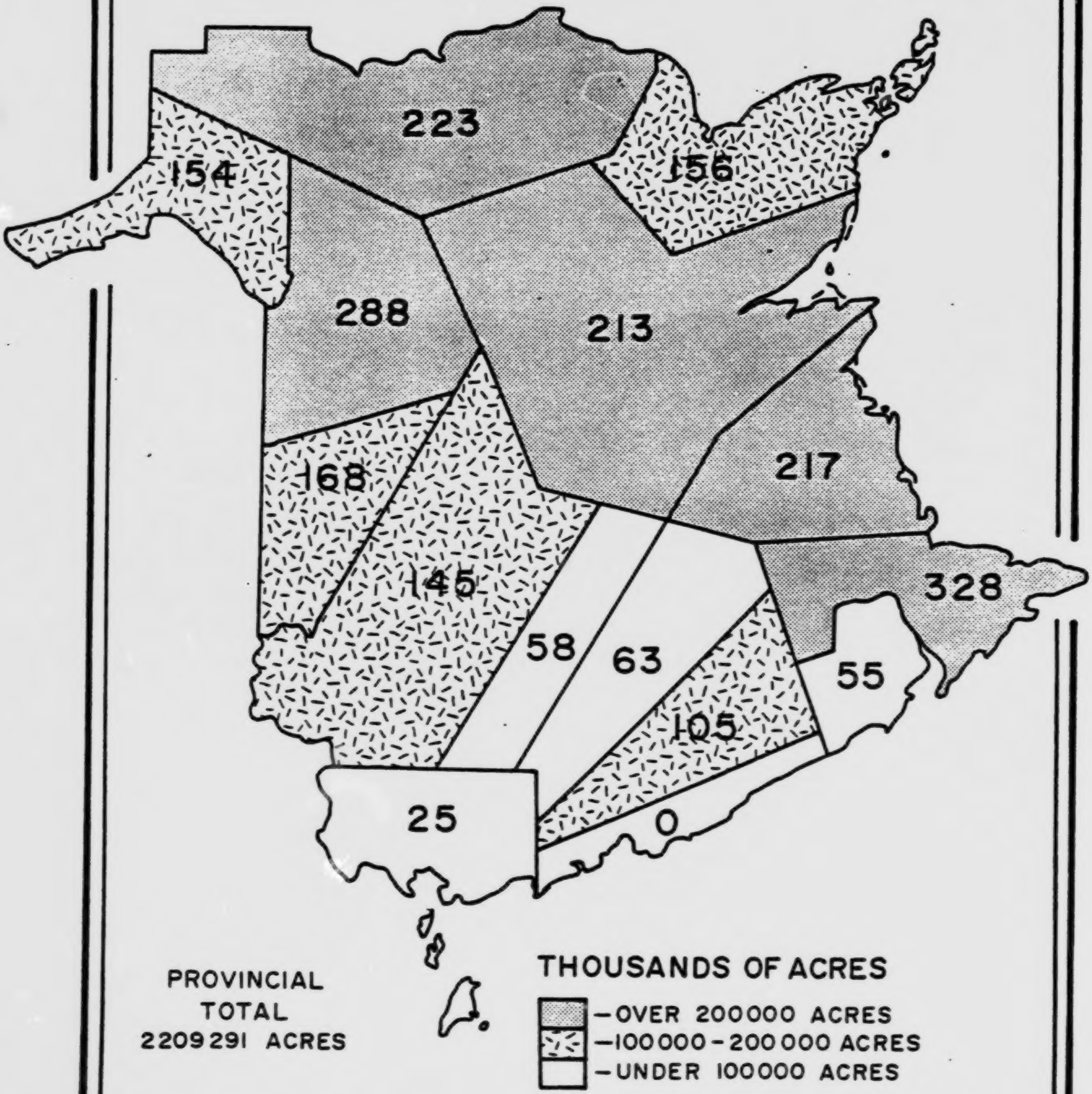
# AGRICULTURAL BLOCKING*



Land capable of agricultural production in blocks of over 500 acres.

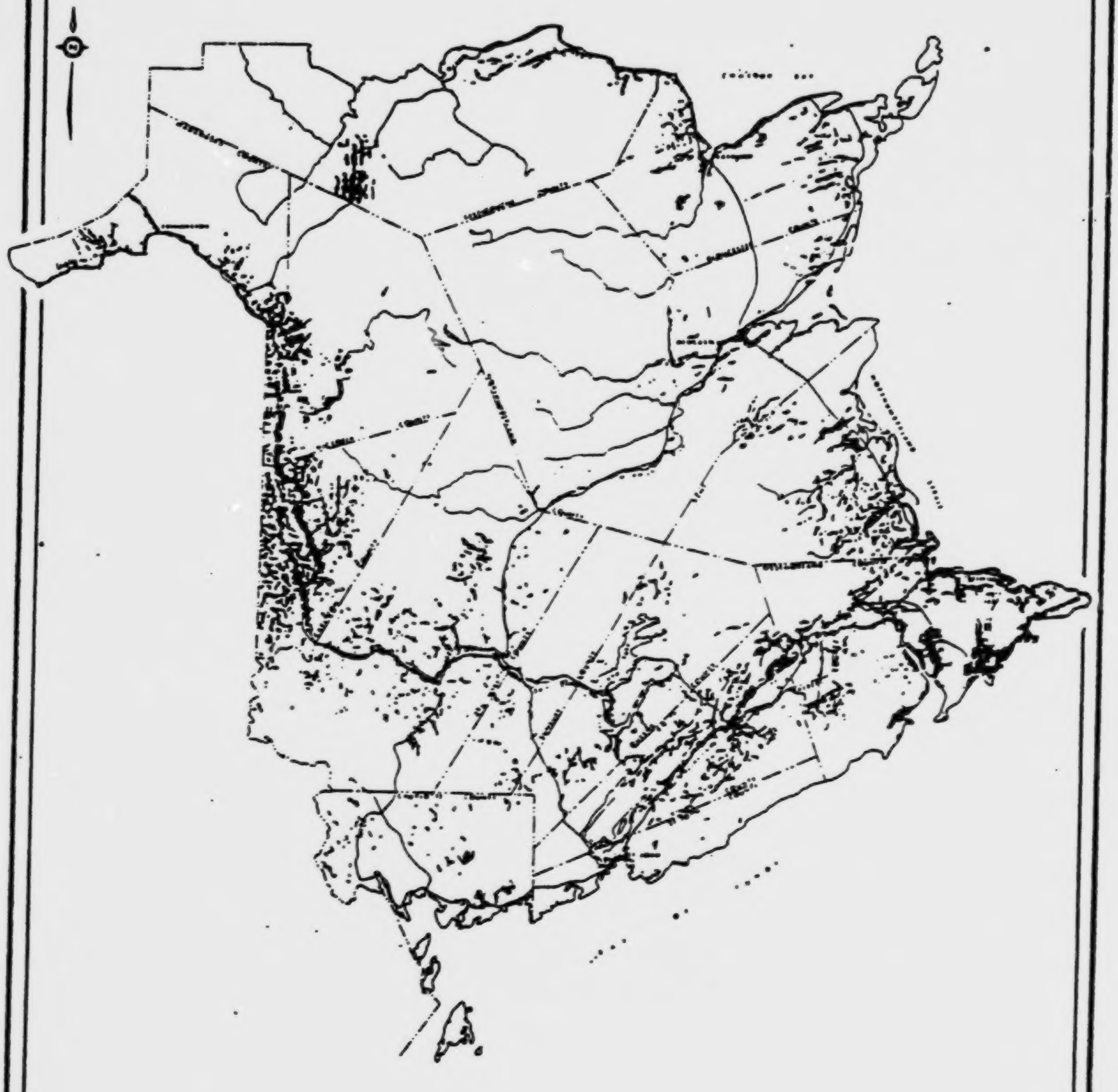
Source : Maritime Resource Management Service

# LAND WITH AGRICULTURAL POTENTIAL IN BLOCKS OVER 500 ACRES


223
154
156
288
213
168
217
145
328
58
63
55
105
25
0
PROVINCIAL
TOTAL
2209291 ACRES
THOUSANDS OF ACRES
—OVER 200000 ACRES
—100000-200000 ACRES
—UNDER 100000 ACRES

Sources : Canada Land Inventory and 1981 Census

# CLEARED LAND



Source : Maritime Resource Management Service

# APPENDIX G

# APPENDIX G

## POPULATION DISTRIBUTION; RURAL, URBAN, COUNTY.

G1 Evolution of the Urban-Rural Population in New Brunswick (1871 - 1981) (Graph).

G2 Population Change in % (Urban, Rural) 1971 - 1976 and 1976 - 1981 (map).

G3 Population Distribution in New Brunswick (1871 - 1981)

G4 Evolution of the Urban-Rural Population of New Brunswick 1971 - 1981 (Graph).

# POPULATION DISTRIBUTION IN N.B.

## Evolution of the Urban and Rural Population

### Tabulation

| Year | Rural | Urban | Total |
|---|---|---|---|
| 1871 | 235,981 | 49,613 | 285,594 |
| 1881 | 262,143 | 59,090 | 321,233 |
| 1891 | 259,055 | 62,208 | 321,263 |
| 1901 | 253,180 | 77,940 | 331,120 |
| 1911 | 256,951 | 94,938 | 351,889 |
| 1921 | 270,201 | 117,675 | 387,876 |
| 1931 | 279,756 | 128,463 | 408,219 |
| 1941 | 317,085 | 140,316 | 457,401 |
| 1951 | 342,639 | 173,058 | 515,697 |
| 1961 | 382,823 | 215,113 | 597,936 |
| 1971 | 243,001 | 391,556 | 634,557 |
| 1976 | 249,407 | 427,843 | 677,250 |
| 1981 | 267,937 | 428,466 | 696,403 |

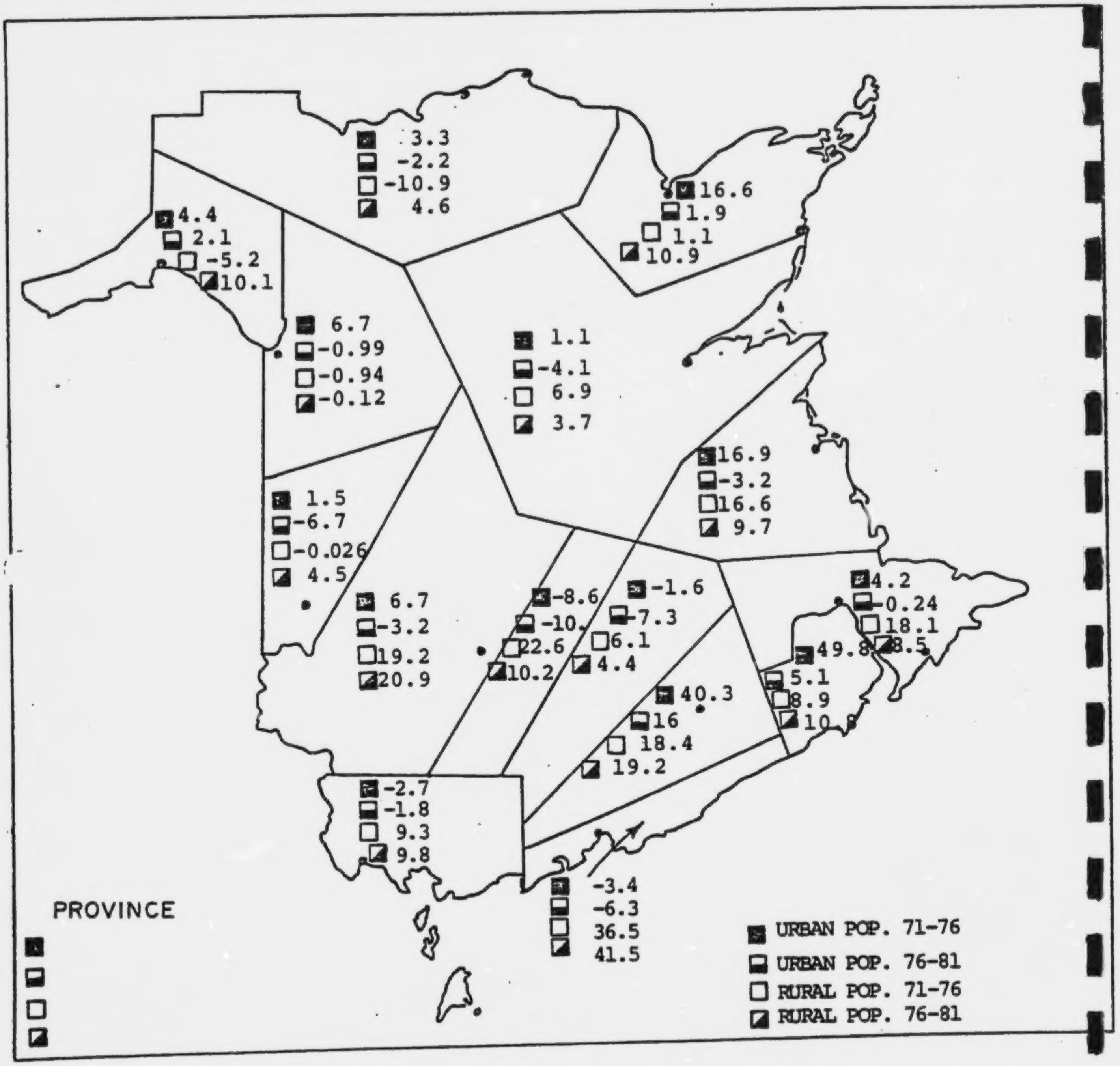
## Percentage Evolution of the Urban and Rural Population

### Percentage

| Year | Rural | Urban |
|---|---|---|
| 1871 | 82.6% | 17.4% |
| 1881 | 81.6 | 18.4 |
| 1891 | 79.4 | 20.6 |
| 1901 | 76.4 | 23.6 |
| 1911 | 73.0 | 27.0 |
| 1921 | 69.7 | 30.3 |
| 1931 | 68.5 | 31.5 |
| 1941 | 69.3 | 30.7 |
| 1951 | 67.5 | 32.5 |
| 1961 | 61.2 | 38.8 |
| 1971 | 38.3 | 61.7 |
| 1976 | 36.8 | 63.2 |
| 1981 | 38.5 | 61.5 |

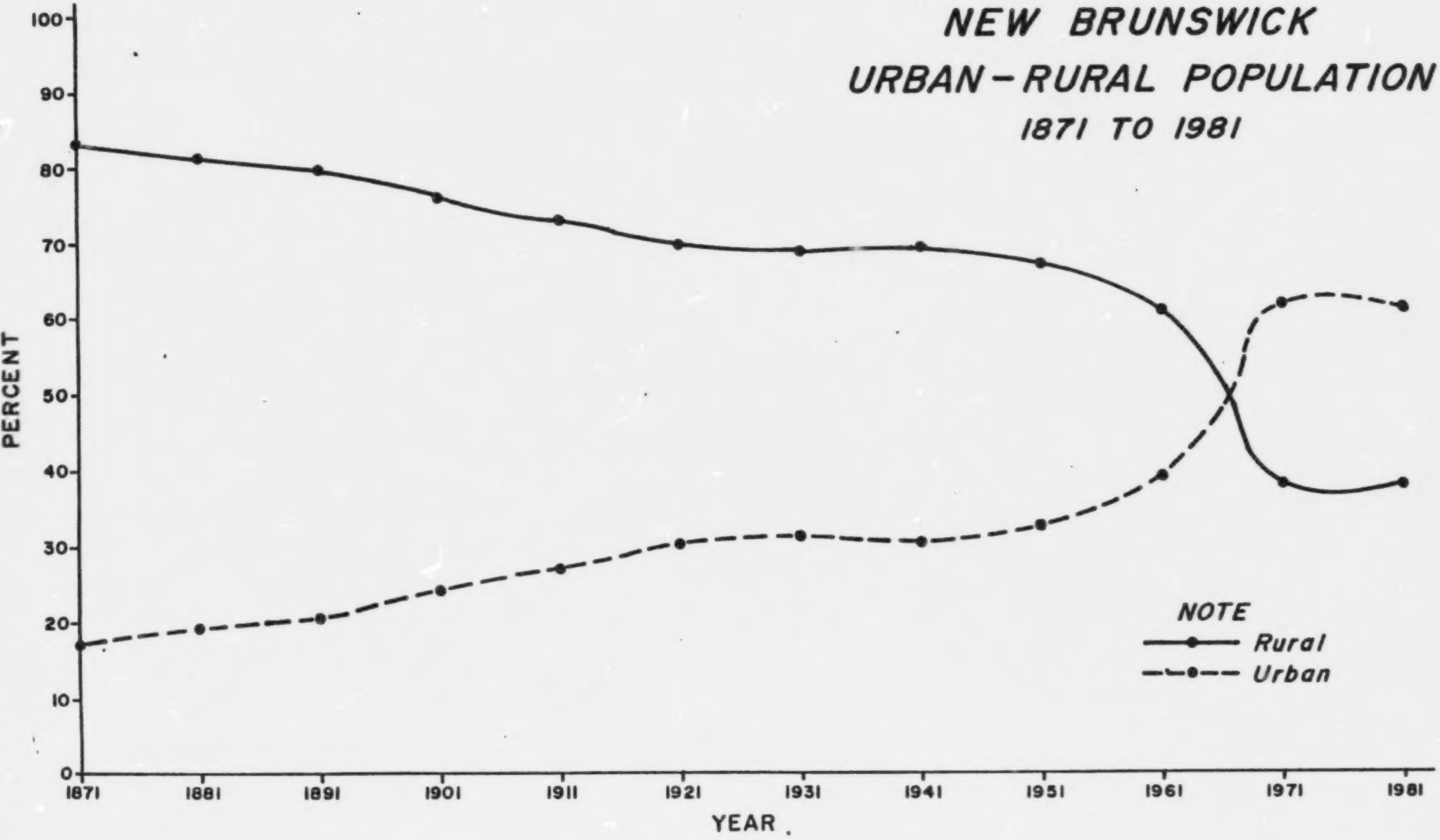
Source: Statistics Canada.

POPULATION CHANGE IN PERCENTAGE (URBAN, RURAL) 1971-76, 1976-81


3.3
-2.2
-10.9
4.6
16.6
1.9
1.1
10.9
4.4
2.1
-5.2
10.1
6.7
-0.99
-0.94
-0.12
1.1
-4.1
6.9
3.7
16.9
-3.2
16.6
9.7
1.5
-6.7
-0.026
4.5
6.7
-3.2
19.2
20.9
-8.6
-10.
22.6
10.2
-1.6
-7.3
6.1
4.4
4.2
-0.24
18.1
8.5
49.8
5.1
8.9
10.8
40.3
16
18.4
19.2
-2.7
-1.8
9.3
9.8
-3.4
-6.3
36.5
41.5
PROVINCE
URBAN POP. 71-76
URBAN POP. 76-81
RURAL POP. 71-76
RURAL POP. 76-81

Source: Statistics Canada.

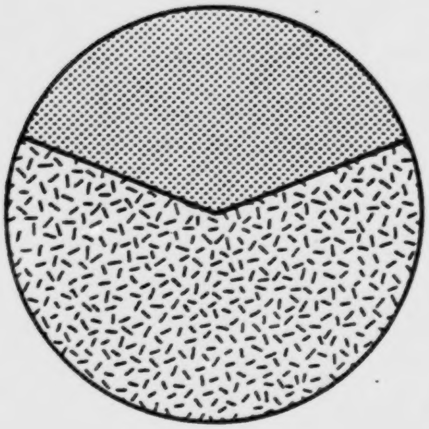
G3



NEW BRUNSWICK
URBAN-RURAL POPULATION
1871 TO 1981

# EVOLUTION OF THE URBAN-RURAL POPULATION OF NEW BRUNSWICK

## 1971 TO 1981

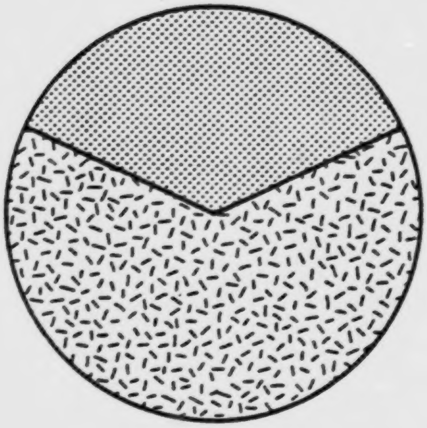


1971

PROVINICAL POPULATION
634 557

RURAL POPULATION
243 001 = 38.3 %

URBAN POPULATION
391 556 = 61.7 %

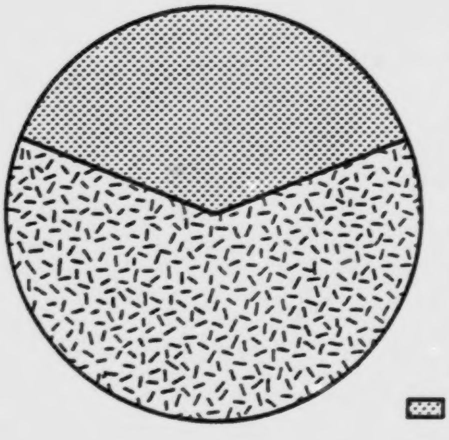


1976

PROVINCIAL POPULATION
677 250

RURAL POPULATION
249 407 = 36.8 %

URBAN POPULATION
427 843 = 63.2 %



1981

PROVINCIAL POPULATION
696 405

RURAL POPULATION
267 939 = 38.5 %

URBAN POPULATION
428 466 = 61.5 %

NOTE: Source-Dept. of Municipal Affairs

▨ Rural Population (nonincorporated areas in New Brunswick)

▨ Urban Population (incorporated areas in New Brunswick)

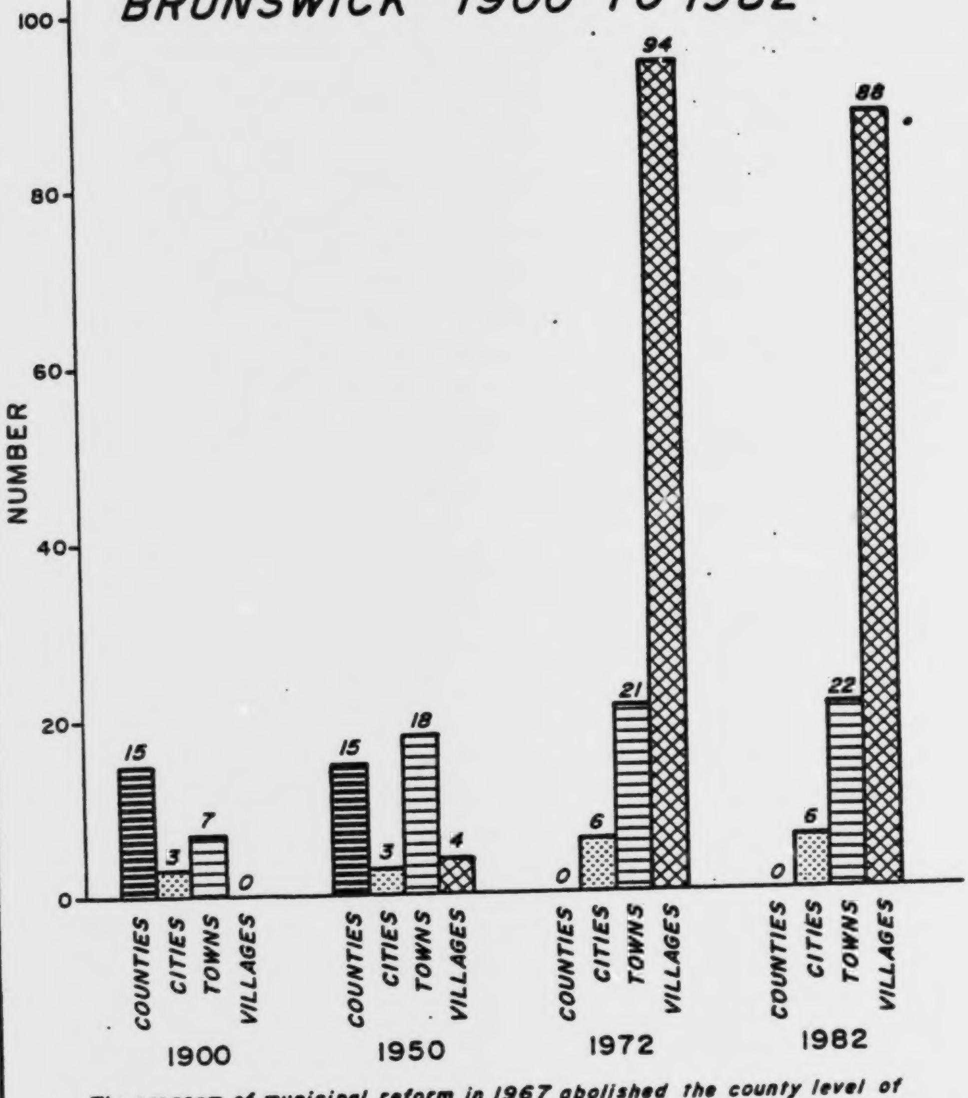
# APPENDIX H

# APPENDIX H

## ADMINISTRATIVE BOUNDARIES

| | | Page |
|---|---|---|
| 1. | Evolution of Local Government Jurisdictions in New Brunswick 1900 to 1982 (Graph) | H1 |
| 2. | Boundary Changes in New Brunswick Municipalities | H2 |
| 3. | Summary of Boundary Changes 1970 to 1981 | H6 |
| 4. | Some Existing Administrative Regions | H7 |

# EVOLUTION OF LOCAL GOVERNMENT JURISDICTICTIONS IN NEW BRUNSWICK 1900 TO 1982



*The program of municipal reform in 1967 abolished the county level of government. In those areas without local government the Department of Municipal Affairs administers Local Service Districts to provide appropriate services. Local Service Districts totaled 192 in 1972 and 233 in 1982.*

**Source : Municipal Journal**

## BOUNDARY CHANGES IN NEW BRUNSWICK MUNICIPALITIES

### 1970/71 Boundary Revisions

| | | |
|---|---|---|
| Village of East Shediac | January 1, 1971 | 70-825 |
| Village of Bristol | April 1, 1971 | 71-201 |

### 1970/71 New Incorporations

| | | Order-In-Council |
|---|---|---|
| Village of Nackawic | November 3, 1970 | 70-772 |

### 1971/72 Boundary Revisions

| | | |
|---|---|---|
| Village of St. Quentin | July 1, 1971 | 71-357 |
| Village of Plaster Rock | November 1, 1971 | 71-709 |
| Village of Saint-Antoine | January 1, 1972 | 71-850 |
| Village of Salisbury | November 1, 1972 | 71-709 |
| Village of Florenceville | January 1, 1972 | 71-669 |

### 1971/72 New Incorporations

Nil

### 1972/73 Boundary Revisions

Nil

### 1972/73 New Incorporations

| | | |
|---|---|---|
| Village of Balmoral | October 25, 1972 | 72-825 |
| Village of Blacks Harbour | November 1, 1972 | 72-825 |

### 1972/73 Amalgamations

| | |
|---|---|
| Amalgamation of Grand Bay to the Village of Pamdenec to form the Village of Grand Bay Effective January 1, 1973. | 72-867 |

### 1973/74 Boundary Revisions

| | | |
|---|---|---|
| Village of Alma | October 1, 1973 (reduction) | 73-809 |
| Village of Charlo | October 15, 1973 (reduction) | 72-826 |

## 1973/74 Boundary Revisions (continued)

| | | |
|---|---|---|
| Village of McAdam | October 1, 1973 (reduction) | 73-809 |
| Village of Petitcodiac | October 1, 1973 (reduction) | 73-746 |
| Village of Riviere-Verte | October 1, 1973 (reduction) | 73-746 |
| Village of Saint-Basile | October 1, 1973 (reduction) | 73-746 |
| City of Edmundston | October 17, 1973 (addition) | 73-845 |
| Town of Woodstock | September 1, 1973 (addition) | 73-763 |
| Village of Blackville | October 15, 1973 (addition) | 73-826 |
| Village of Buctouche | October 1, 1973 (addition) | 73-809 |
| Village of Rogersville | July 18, 1973 (addition) | 73-592 |
| Village of Salisbury | June 1, 1973 (addition) | 73-328 |
| Village of Westfield | February 14, 1973 (addition) | 73-117 |

## 1973/74 Amalgamations

| | |
|---|---|
| The Town of Marysville and the Village of Barkers Point, Nashwaaksis and Silverwood amalgamated to Fredericton effective July 9, 1973 | 73-442 |
| The Village of Lewisville was amalgamated with the City of Moncton effective July 9, 1973 | 73-442 |
| The Town of Riverview was formed out of the former Villages of Bridgedale, Gunningsville and Riverview Heights effective July 9, 1973 | 73-442 |
| The Villages of Chartersville and St. Anselme amalgamated to the Town of Dieppe effective July 9, 1972 | 73-442 |
| The two towns of St. Stephen and Milltown were amalgamated on October 1, 1973 | 73-745 |
| The Villages of Hillsborough and Surrey were amalgamated and became the Village of Hillsborough effective October 15, 1973 | 73-811 |
| The Village of East Shediac was amalgamated with the Town of Shediac effective October 15, 1973 | 73-810 |

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## 1974/75 Boundary Revisions

| | | |
|---|---|---|
| Village of Jacquet River | April 1, 1974 (reduction) | 74-290 |
| Village of Plaster Rock | January 1, 1975 (addition) | 74-937 |

### 1974/75

| | | |
|---|---|---|
| Village of Balmoral | October 1, 1974 (addition) | 74-840 |

## 1975/76 Boundary Revisions

| | | Order-In-Council |
|---|---|---|
| Village of Saint-Quentin | June 2, 1975(addition) | 75-330 |
| Village of Westfield | July 1, 1975(addition) | 75-389 |
| Village of Meductic | July 1, 1975(addition) | 75-389 |
| Village of Perth-Andover | July 1, 1975(addition) | 75-389 |
| Village of Grand Bay | July 1, 1975(addition) | 75-389 |
| Village of Charlo | October 22, 1975(reduction) | 75-773 |
| Town of Sackville | August 15, 1975(addition) | 75-606 |
| Town of Sussex | October 15, 1975(addition) | 75-739 |

NOTE: The Town of St. Stephen-Milltown was changed to the Town of St. Stephen June 4, 1975 — 75-390

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## 1976/77 Boundary Revisions

| | | |
|---|---|---|
| Village of Saint-Antoine | November 3, 1976(addition) | 76-816 |
| Village of Eel River Crossing | November 3, 1976(addition) | 76-816 |

## 1976/77 New Incorporations

| | | |
|---|---|---|
| Village of Darlington | January 1, 1977 | 76-863 |

NOTE: The Village of Nackawic received town status on April 7, 1976 — 76-276

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## 1977/78 Boundary Revisions

| | | |
|---|---|---|
| Town of Woodstock | June 1, 1977(addition) | 77-414 |
| Village de Grande Anse | April 13, 1977(addition) | 77-276 |
| Village de Lameque | August 1, 1977(addition) | 77-464 |
| Village of Eel River Crossing | June 22, 1977(addition) | 77-498 |
| Village of Pointe-Verte | August 1, 1977(addition) | 77-641 |
| Town of Grand Falls | November 30, 1977(reduction) | 77-974 |
| Village of Darlington | April 6, 1977(reduction) | 77-256 |
| Village of Belledune | November 30, 1977(addition) | 77-974 |
| Village of Pointe-Verte | November 30, 1977(reduction) | 77-974 |

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## 1978/79 Boundary Revisions

| | | Order-In-Council |
|---|---|---|
| Town of Oromocto | May 1, 1978(addition) | 78-383 |
| Village of Drummond | May 1, 1978(addition) | 78-383 |
| Village de St. Hilaire | May 10, 1978(addition) | 78-383 |
| Village of Nigadoo | June 14, 1978(addition) | 78-515 |
| City of Campbellton<br>(Richardsville annexed to Campbellton) | January 1, 1979 | 78-712 |

## 1978/79 New Incorporations

| | | |
|---|---|---|
| Village de St Léolin | October 1, 1978 | 78-515 |
| Village de Verret | October 1, 1978 | 78-544 |
| Village de Sheila | October 1, 1978 | 78-712 |

## 1979/80 Boundary Revisions

| | | | |
|---|---|---|---|
| Village of Sainte-Anne-de-Madawaska | January 1, 1980 | (addition) | 79-158 |
| Village of Balmoral | January 1, 1980 | (addition) | 79-246 |
| Village of Sheila | May 24, 1979 | (addition) | 79-409 |
| Village of Saint-Jacques | January 1, 1980 | (addition) | 79-448 |
| Village of Jacquet River | January 1, 1980 | (addition) | 79-675 |

## 1980/81 Boundary Revisions

| | | |
|---|---|---|
| Village of Florenceville | May 8, 1980 (addition) | 80-367 |
| Village of Loggieville | June 1, 1980 (addition) | 80-394 |
| Village de Saint-Antoine | January 1, 1981 (deletion) | 80-590 |
| Village de St. André | September 1, 1980 (addition) | 80-691 |
| Village of Charlo | January 1, 1981 (addition) | 80-817 |

## 1981/82 Boundary Revisions

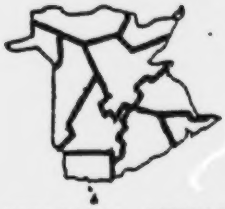
| | | |
|---|---|---|
| Village of Cap-Pelé | April 8, 1981 (rewritten) | 81-165 |
| Village of Clair | April 15, 1981 (addition) | 81-207 |
| Town of Dieppe | July 22, 1981 (addition) | 81-522 |
| Town of Shippagan | August 5, 1981 (addition) | 81-563 |
| Village of Lamèque | August 5, 1981 (addition) | 81-559 |
| Village of Plaster Rock | January 6, 1982 (addition) | 81-975 |

# BOUNDARY CHANGES IN N.B. 1971-81

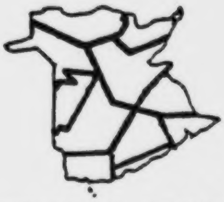
| Year | Boundary Extensions | Boundary Reductions | Amalgamations | New Villages | |
|---|---|---|---|---|---|
| 1970-71 | 2 | 0 | 0 | 1 | |
| 1971-72 | 5 | 0 | 0 | 0 | |
| 1972-73 | 0 | 0 | 1 | 2 | |
| 1973-74 | 7 | 6 | 7 | 0 | |
| 1974-75 | 2 | 1 | 0 | 0 | |
| 1975-76 | 7 | 1 | 0 | 0 | |
| 1976-77 | 2 | 0 | 0 | 1 | |
| 1977-78 | 6 | 3 | 0 | 0 | |
| 1978-79 | 5 | 0 | 0 | 3 | |
| 1979-80 | 5 | 0 | 0 | 0 | |
| 1980-81 | 4 | 1 | 0 | 0 | |
| 1981-82 | 5 | 0 | 0 | 0 | |
| TOTALS | 50 | 12 | 8 | 7 | |

Note: As of 1981 there were six cities, twenty one towns, eighty eight villages and two hundred and thirty two local service districts in N.B.

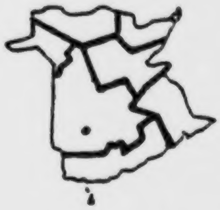
## SOME EXISTING ADMINISTRATIVE REGIONS



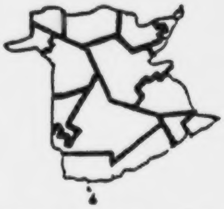
MUNICIPAL AFFAIRS
Municipal Services Branch



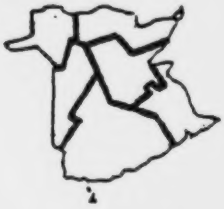
MUNICIPAL AFFAIRS
Assessment Branch



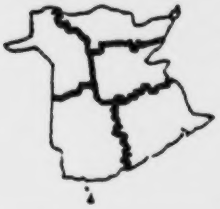
MUNICIPAL AFFAIRS
Community Planning Branch



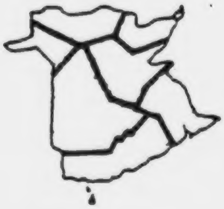
COMMERCE & DEVELOPMENT



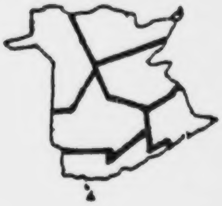
AGRICULTURE



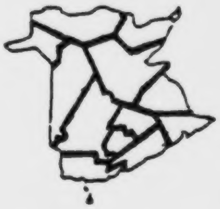
NATURAL RESOURCES



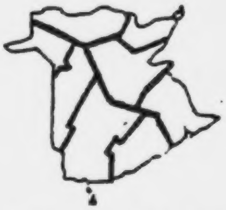
SOCIAL SERVICES



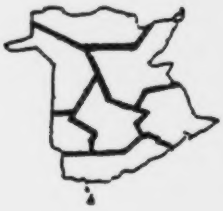
ENVIRONMENT



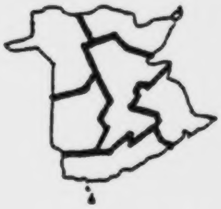
TRANSPORTATION



LABOUR & MANPOWER
Market Services



TOURISM



LABOUR & MANPOWER
Fire Marshall

# APPENDIX 1

# APPENDIX I

## SUBDIVISIONS & BUILDING PERMITS

Information is included on costs to the Government associated with Subdivisions as well as statistics and the numbers of Subdivisions and building permits approved.

Page

1. Costs associated with Subdivision streets I2
2. New Roads Approved in Subdivision Plans 1971 - 1981 I3
3. New Driveway Culvert Installations I5
4. Approved Subdivisions and Lots 1975 - 1982 I6
5. Building Permits Issued in Non-Incorporated Areas I7

## COSTS ASSOCIATED WITH SUBDIVISION STREETS

### Capital Cost

| | | |
|---|---|---|
| 1st year | Initial Prime & Seal | $17,000/kilometre |
| 2nd year | Second Seal | $ 9,000/kilometre |

Note: Reseal scheduled every 8-10 years. @ $10,000/kilometre.

### Maintenance Cost

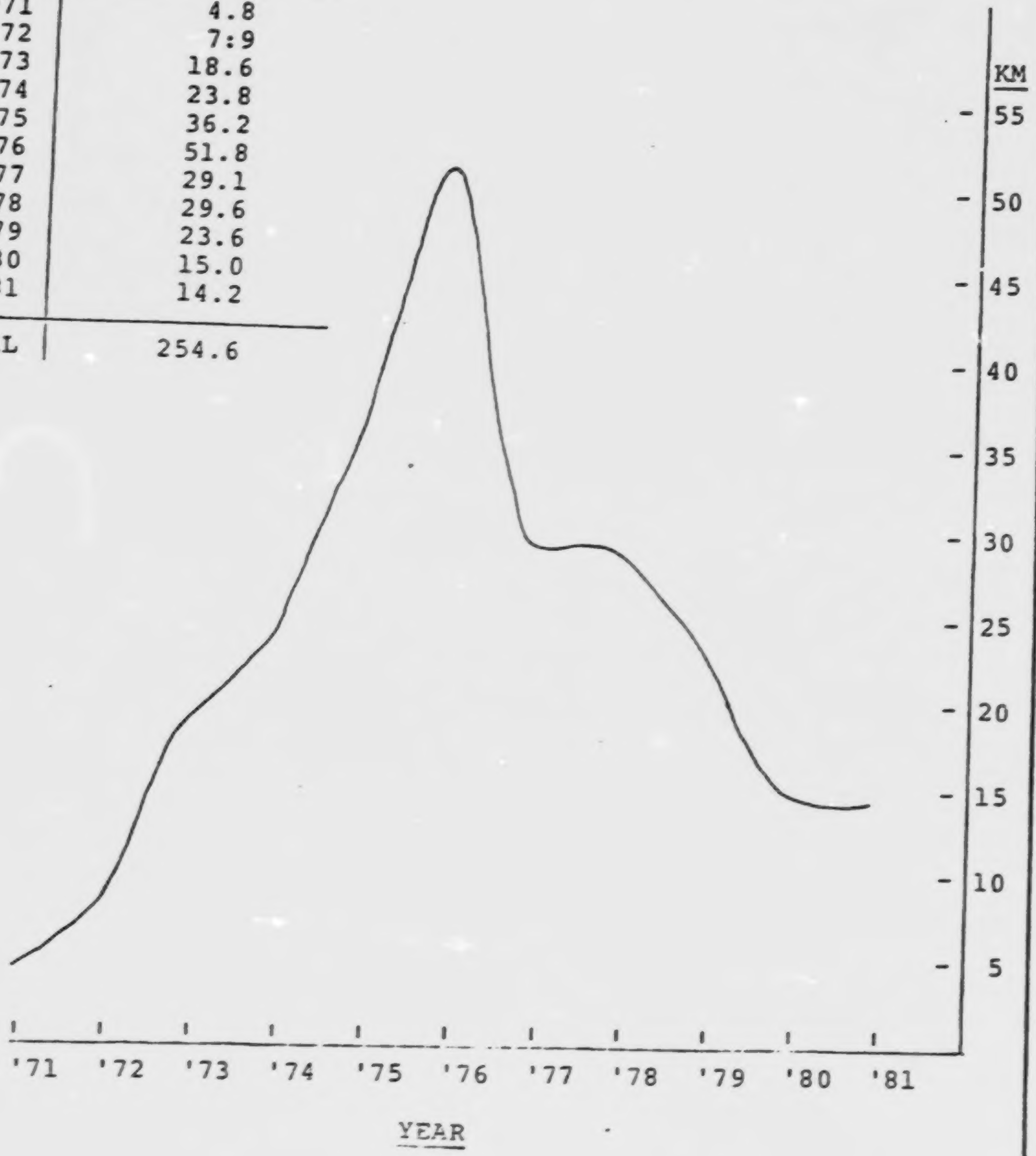
Approximately $1,800 - $2,000/kilometre annually for summer and winter maintenance.

Source: Department of Transportation

Note: In the unincorporated area the developer must build the roadbed to approved government standards. The Province does, however, pave and maintain the street system.

## NEW ROADS APPROVED IN SUBDIVISIONS 1971-1981
## (KILOMETRES)

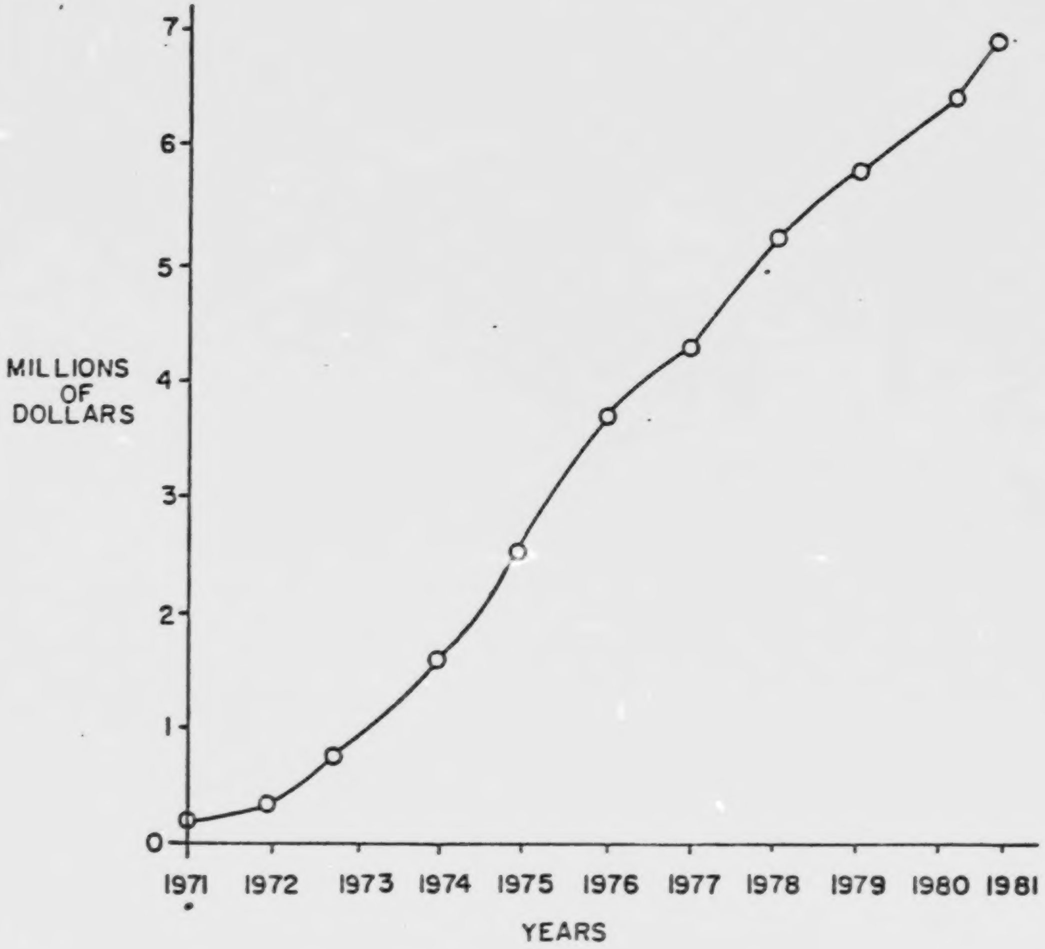
| Year | KM OF NEW ROADS |
|---|---|
| 1971 | 4.8 |
| 1972 | 7:9 |
| 1973 | 18.6 |
| 1974 | 23.8 |
| 1975 | 36.2 |
| 1976 | 51.8 |
| 1977 | 29.1 |
| 1978 | 29.6 |
| 1979 | 23.6 |
| 1980 | 15.0 |
| 1981 | 14.2 |
| TOTAL | 254.6 |



Source: Department of Transportation

## GOVERNMENT COST COMMITTED BY APPROVING SUBDIVISIONS IN NON INCORPORATED AREA

(Road Construction - 1971 - 1981)



NOTE Capital cost is calculated at seventeen thousand dollars for the first prime and seal per kilometer and nine thousand dollars for the seal per kilometer. (1981 dollars)

Source: Department Of Transportation

## NEW DRIVEWAY CULVERT INSTALLATIONS

### (unincorporated area)

### (1975-1981)

| YEAR | NUMBER INSTALLED | AVERAGE COST PER INSTALLATION (dollars) |
|---|---|---|
| 1975 | 4360 | 338.00 |
| 1976 | 4052 | 368.00 |
| 1977 | 3554 | 353.00 |
| 1978 | 3658 | 363.0- |
| 1979 | 3750 | 393.00 |
| 1980 | 3151 | 406.00 |
| 1981 | 2749 | 504.00 |

## APPROVED SUBDIVISIONS AND LOTS IN THE UNINCORPORATED AREAS OF N.B.
by
FISCAL YEARS

| COUNTY | 1975 - 1976 | | 1976 - 1977 | | 1977 - 1978 | | 1978 - 1979 | | 1979 - 1980 | | 1980 - 1981 | | 1981 - 1982 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No.of Subs. | No.of Lots | No.of Subs. | No.of Lots | No.of Subs. | No.of Lots | No.of Subs. | No.of Lots | No.of Subs. | No.of Lots | No.of Subs. | No.of Lots | No.of Subs. | No.of Lots |
| Albert | 58 | 70 | 35 | 52 | 40 | 64 | 48 | 68 | 41 | 51 | 51 | 80 | 35 | 53 |
| Carleton | 185 | 227 | 181 | 239 | 160 | 227 | 176 | 213 | 176 | 208 | 193 | 214 | 167 | 171 |
| Charlotte | 5 | 15 | 7 | 8 | 80 | 150 | 94 | 138 | 106 | 163 | 67 | 86 | 62 | 96 |
| Kings | 237 | 570 | 247 | 490 | 185 | 412 | 211 | 307 | 179 | 293 | 189 | 337 | 171 | 298 |
| Madawaska | 248 | 420 | 239 | 360 | 213 | 273 | 193 | 266 | 264 | 349 | 183 | 234 | 165 | 267 |
| Queens | 90 | 146 | 29 | 73 | 53 | 77 | 72 | 116 | 74 | 211 | 57 | 78 | 61 | 77 |
| Saint John | 52 | 150 | 54 | 178 | 41 | 227 | 40 | 77 | 63 | 90 | 41 | 71 | 21 | 36 |
| Sunbury | 115 | 225 | 53 | 253 | 72 | 232 | 61 | 142 | 61 | 156 | 35 | 66 | 44 | 81 |
| Victoria | 108 | 152 | 80 | 125 | 46 | 69 | 99 | 127 | 109 | 149 | 140 | 172 | 133 | 165 |
| Westmorland | 201 | 435 | 154 | 312 | 126 | 220 | 133 | 247 | 155 | 228 | 186 | 353 | 78 | 132 |
| York | 238 | 1000 | 300 | 1135 | 233 | 710 | 230 | 636 | 207 | 396 | 115 | 155 | 167 | 238 |
| Northumberland | | | | | 14 | 13 | 124 | 210 | 93 | 154 | 99 | 191 | 83 | 104 |
| Kent | | | | | | | | | | | 5 | 6 | 92 | 132 |
| Gloucester | | | | | | | | | | | | | 21 | 20 |
| Restigouche | | | | | | | | | | | 4 | 11 | 18 | 24 |
| Provincial Total | 1537 | 3410* | 1379 | 3225* | 1263 | 2674** | 1482 | 2553** | 1528 | 2448** | 1365 | 2054 | 1209 | 1692 |

*total excludes Northumberland, Kent, Gloucestor and Restigouche Counties
**total excludes Kent, Gloucester and Restigouche Counties

Source: Department of Municipal Affairs

## BUILDING PERMIT IN THE UNINCORPORATED AREA OF N.B.

## FISCAL YEAR

## APRIL 1, 1976 - DECEMBER 31, 1976

| COUNTY | NO. OF BUILDING PERMITS | ESTIMATED VALUE OF BUILD PERMITS |
|---|---|---|
| ALBERT | 20 | $ 112,150.00 |
| CARLETON | 34 | 4,068,000.00 |
| CHARLOTTE | 32 | 464,975.00 |
| KINGS | 44 | 828,050.00 |
| MADAWASKA | 70 | 1,107,480.00 |
| QUEENS | 55 | 755,000.00 |
| SAINT JOHN | 170 | 3,114,557.00 |
| SUNBURY | 115 | 3,522,000.00 |
| VICTORIA | 45 | 606,500.00 |
| WESTMORLAND | 94 | 1,066,200.00 |
| YORK | 460 | 11,000,000.00 |
| PROVINCIAL TOTAL | 1,139 | $26,644,912.00 |

## BUILDING PERMIT IN THE UNINCORPORATED AREA OF N.B.

### FISCAL YEAR

| | APRIL 1, 1978 - MARCH 31, 1979 | | APRIL 1, 1979 - MARCH 31, 1980 | |
|---|---|---|---|---|
| COUNTY | NO OF BUILD-PERMITS | ESTIMATED VALUE OF BUILD PERMITS | NO. OF BUILD-PERMITS | ESTIMATED VALUE OF BUILD PERMITS |
| ALBERT | 27 | $ 312,660.00 | 25 | $ 113,803.60 |
| CARLETON | 44 | 4,543,500.00 | 63 | 2,565,000.00 |
| CHARLOTTE | 48 | 772,900.00 | 71 | 1,189,186.45 |
| KINGS | 21 | 617,560.00 | 31 | 988,000.00 |
| MADAWASKA | 100 | 1,649,530.00 | 93 | 1,494,900.00 |
| NORTHUMBERLAND | 29 | 649,000.00 | 36 | 1,094,000.00 |
| QUEENS | 36 | 1,440,727.00 | 26 | 939,600.00 |
| SAINT JOHN | 110 | 2,389,600.00 | 82 | 1,969,500.00 |
| SUNBURY | 139 | 3,625,000.00 | 77 | 1,876,600.00 |
| VICTORIA | 81 | 1,600,700.00 | 60 | 1,169,920.00 |
| WESTMORLAND | 98 | 1,279,710.00 | 91 | 1,336,404.92 |
| YORK | 481 | 15,121,000.00 | 378 | 11,467,000.00 |
| PROVINCIAL TOTAL | 1,214 | $34,001,887.00 | 1,033 | $26,203,915.07 |

## BUILDING PERMIT IN THE UNINCORPORATED AREA OF N.B.

### FISCAL YEAR

| | APRIL 1, 1980 - MARCH 31, 1981 | | APRIL 1, 1981 - MARCH 31, 1982 | |
|---|---|---|---|---|
| COUNTY | NO. OF BUILD-PERMITS | ESTIMATED VALUE OF BUILD PERMITS | NO. OF BUILD-PERMITS | ESTIMATED VALUE OF BUILD PERMITS |
| ALBERT | 18 | $ 221,350.00 | 17 | $ 95,336.00 |
| CARLETON | 57 | 1,860,000.00 | 54 | 1,680,000.00 |
| CHARLOTTE | 81 | 6,501,257.00 | 64 | 783,750.00 |
| GLOUCESTER | | | 9 | 79,800.00 |
| KENT | | | 7 | 309,500.00 |
| KINGS | 19 | 369,300.00 | 25 | 614,700.00 |
| MADAWASKA | 65 | 949,800.00 | 48 | 570,400.00 |
| NORTHUMBERLAND | 33 | 962,450.00 | 54 | 1,210,500.00 |
| QUEENS | 33 | 608,300.00 | 38 | 753,700.00 |
| RESTIGOUCHE | | | 3 | 83,000.00 |
| SAINT JOHN | 83 | 1,837,150.00 | 38 | 394,350.00 |
| SUNBURY | 70 | 1,893,500.00 | 80 | 2,064,550.00 |
| VICTORIA | 64 | 1,376,372.00 | 72 | 2,176,400.00 |
| WESTMORLAND | 85 | 1,112,634.00 | 34 | 467,500.00 |
| YORK | 213 | 7,453,000.00 | 186 | 4,978,532.00 |
| PROVINCIAL TOTAL | 821 | $25,145,113.00 | 729 | 16,262,018.00 |

Source: Department of Municipal Affairs

# APPENDIX J

# APPENDIX J

## LAND USE CHANGES

Page

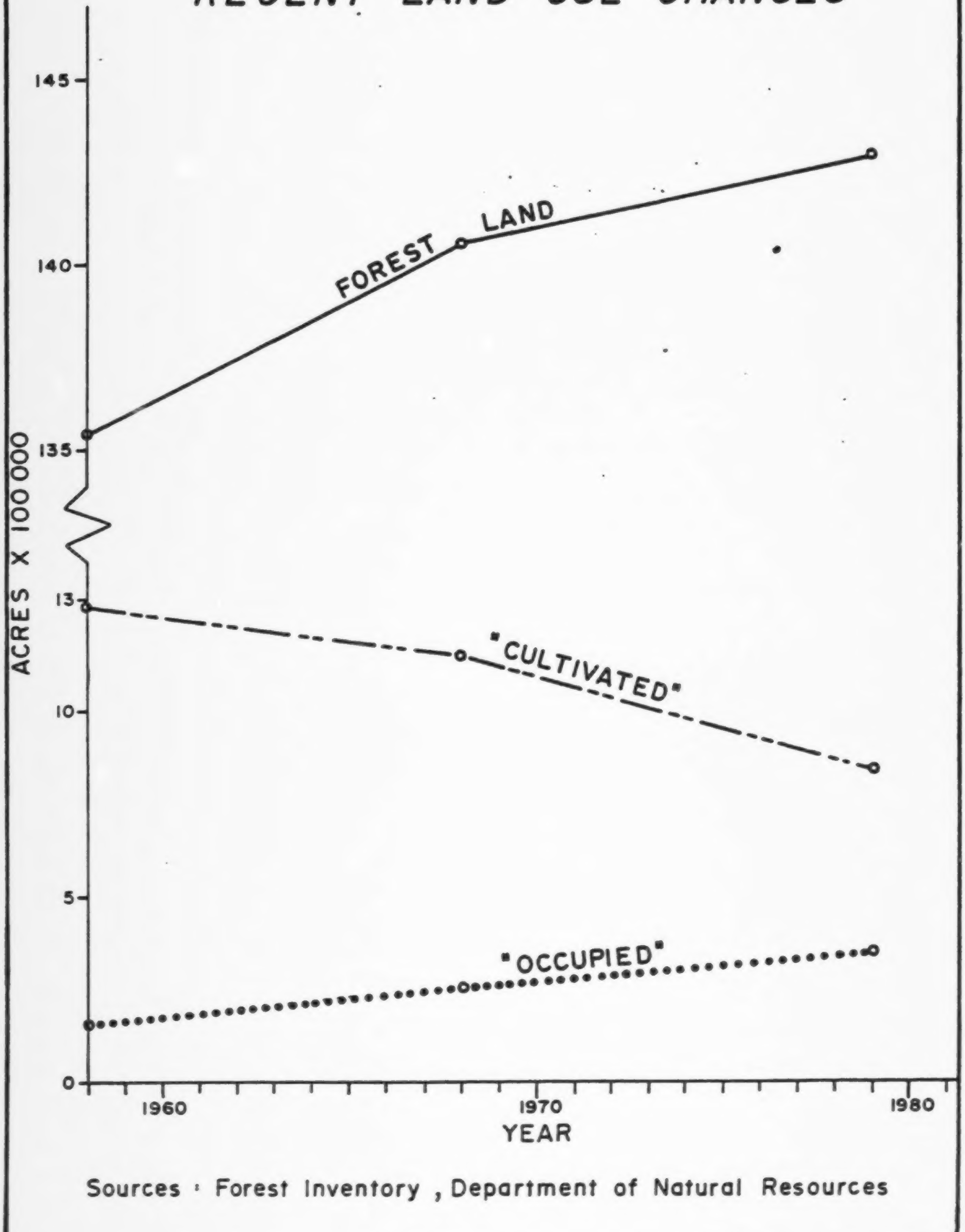
1. Recent Land Use Changes (1958-1979) Forest Land Inventory 1958, 1968, 1979 J2
2. Changing Values of Rural Land J4
3. Market Value Change in Agricultural Land 1970 - 1980 (N.B., Saskatchewan and Canada) J5
4. Number of Census Farms 1931 - 1981 N.B. Farm Size Change 1931 - 1981 J6
5. New Brunswick Improved Agricultural Land 1931 - 1981 J7
6. Woodland Areas on Census Farms 1931 - 1981 Total Farm Area 1931 - 1981 J8
7. Agricultural Land Use in New Brunswick J9
8. New Brunswick Primary Forest Productions 1960 - 1980 J10
9. New Brunswick Primary Forest Production by Ownership Class J11
10. Municipal Statistics J12
11. Redistribution of Pupils Between School Districts 19 and 20, Between 1970 and 1980 J13

Table 1. Land classification (thousands of acres) for the 1958, 1968 and 1979 inventories by condition class for New Brunswick.

| Condition Class | | Year | | |
|---|---|---|---|---|
| | | 1958 | 1968 | 1979 |
| FOREST LAND | | | | |
| Cover Type | S | 5,805 | 5,646 | 5,387 |
| | SH | 3,441 | 3,703 | 3,496 |
| | HS | 2,470 | 2,835 | 3,376 |
| | H | 1,824 | 1,875 | 2,037 |
| Maturity Group | I | 1,522 | 1,961 | 3,164 |
| | II | 6,426 | 8,189 | 8,347 |
| | III | 1,883 | 810 | 521 |
| | IV | 3,709 | 3,099 | 2,264 |
| TOTAL | | 13,540 | 14,059 | 14,296 |
| Plantations | | - | - | 38 |
| Cut | | 535 | 287 | 287 |
| Burn | | 614 | 309 | 67 |
| Old Field | | 304 | 344 | 337 |
| TOTAL | | 1,453 | 940 | 729 |
| TOTAL PRODUCTIVE | | 14,993 | 14,999 | 15,025 |
| NON-PRODUCTIVE | | 278 | 229 | 612 |
| TOTAL FOREST LAND | | 15,271 | 15,228 | 15,637 |
| WASTE LAND | | 613 | 638 | 357 |
| CLEARED LAND | | | | |
| Cultivated | | 1,291 | 1,156 | 848 |
| Occupied | | 171 | 266 | 364 |
| TOTAL | | 1,462 | 1,422 | 1,212 |
| FEDERAL LAND | | 349 | 349 | 401 |
| TOTAL LAND | | 17,695 | 17,637 | 17,607 |
| WATER | | 387 | 445 | 411 |
| TOTAL AREA | | 18,082 | 18,082 | 18,018 |

From New Brunswick Forest Inventory.

## RECENT LAND USE CHANGES



Sources : Forest Inventory , Department of Natural Resources

# CHANGING VALUES OF RURAL LAND

What is an acre of agricultural land worth?

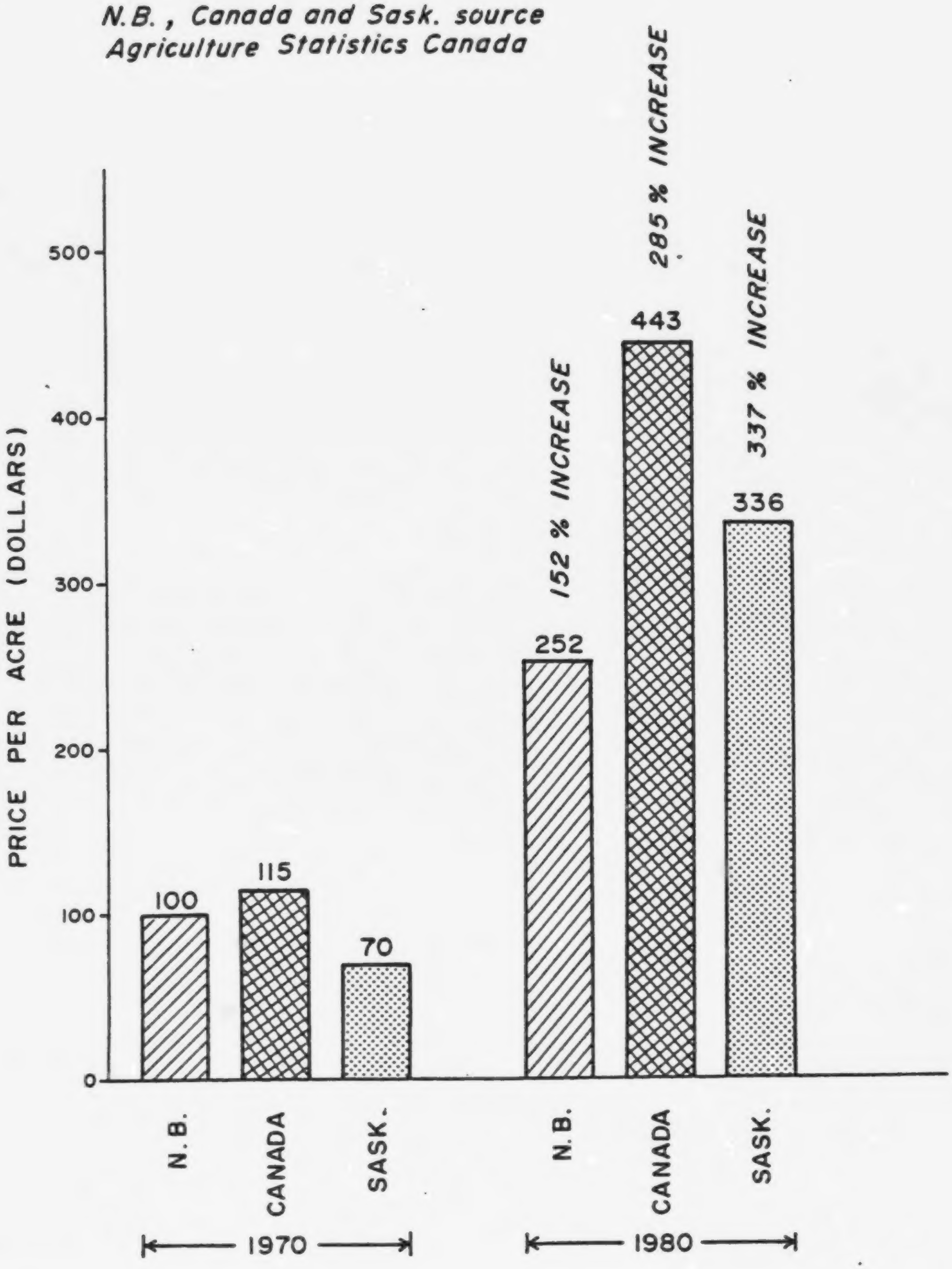
Market value in dollars per acre.

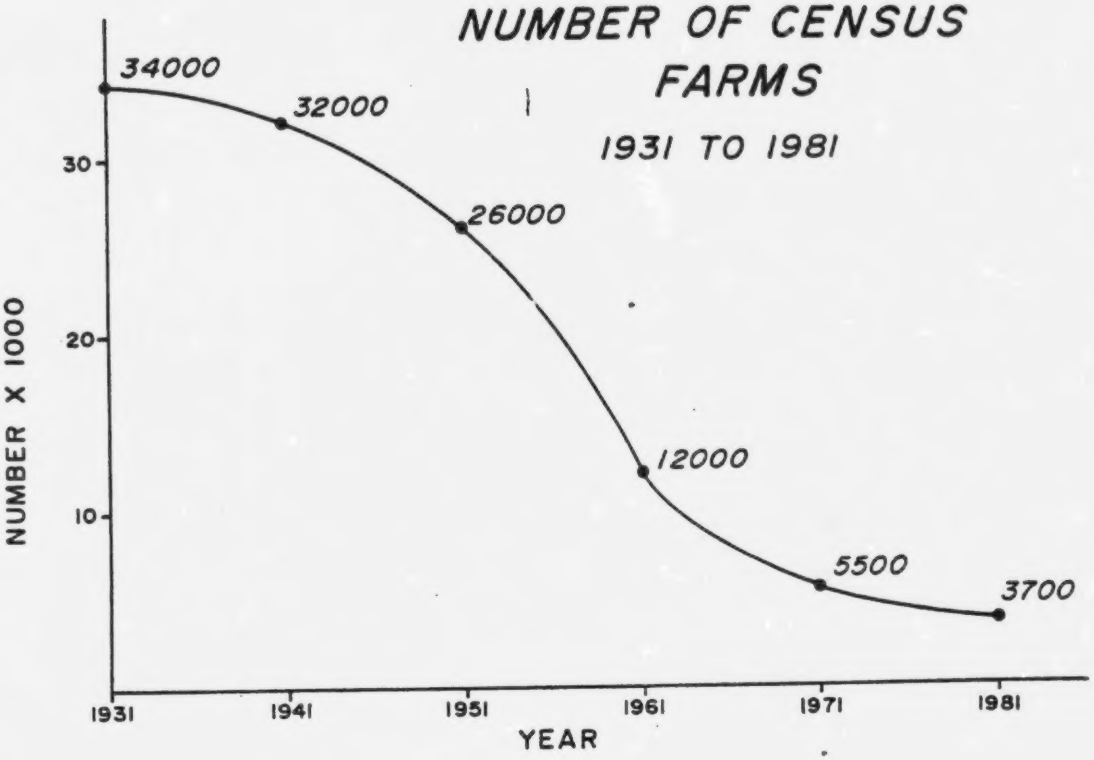
Source: Farming facts 1982, Statistics Canada.

| Province | 1971 | 1981 | Change % |
|---|---|---|---|
| P.E.I. | 100 | 275 | 275 |
| Nova Scotia | 105 | 256 | 244 |
| New Brunswick | 98 | 292 | 298 |
| Quebec | 141 | 489 | 347 |
| Ontario | 345 | 1,522 | 441 |
| Manitoba | 83 | 278 | 335 |
| Saskatchewan | 69 | 336 | 487 |
| Alberta | 93 | 347 | 373 |
| British Columbia | 250 | 1,041 | 416 |
| CANADA | 115 | 475 | 413 |

# MARKET VALUE CHANGE
# IN
# AGRICULTURE LAND
## 1970 TO 1980

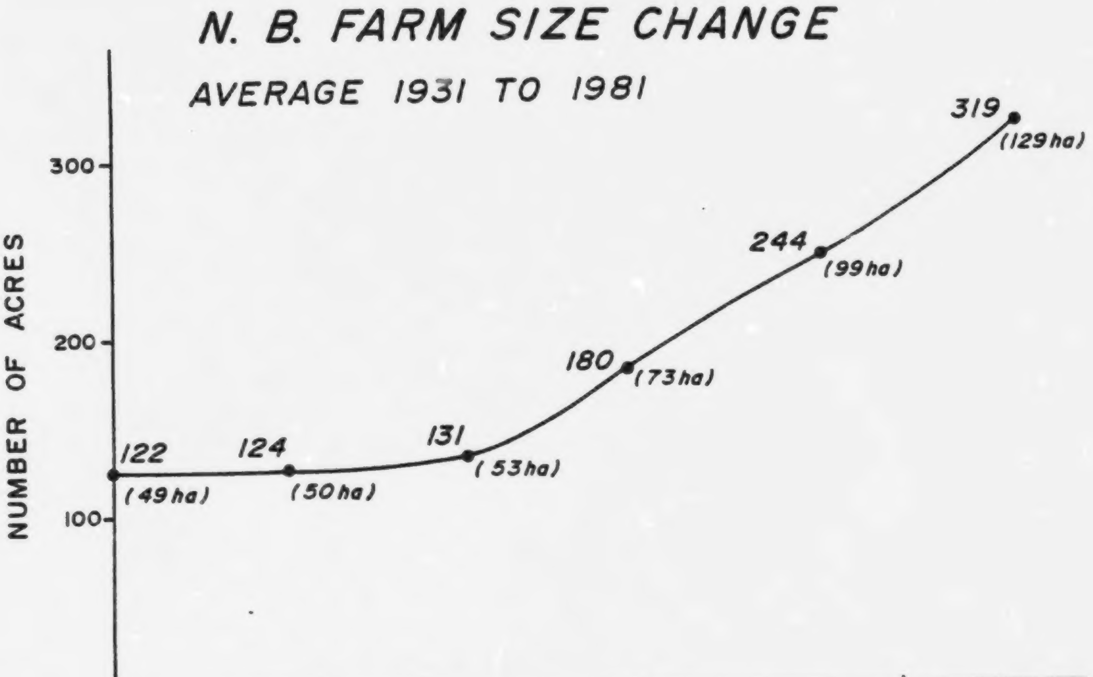
NOTE
N.B., Canada and Sask. source
Agriculture Statistics Canada





NUMBER OF CENSUS FARMS

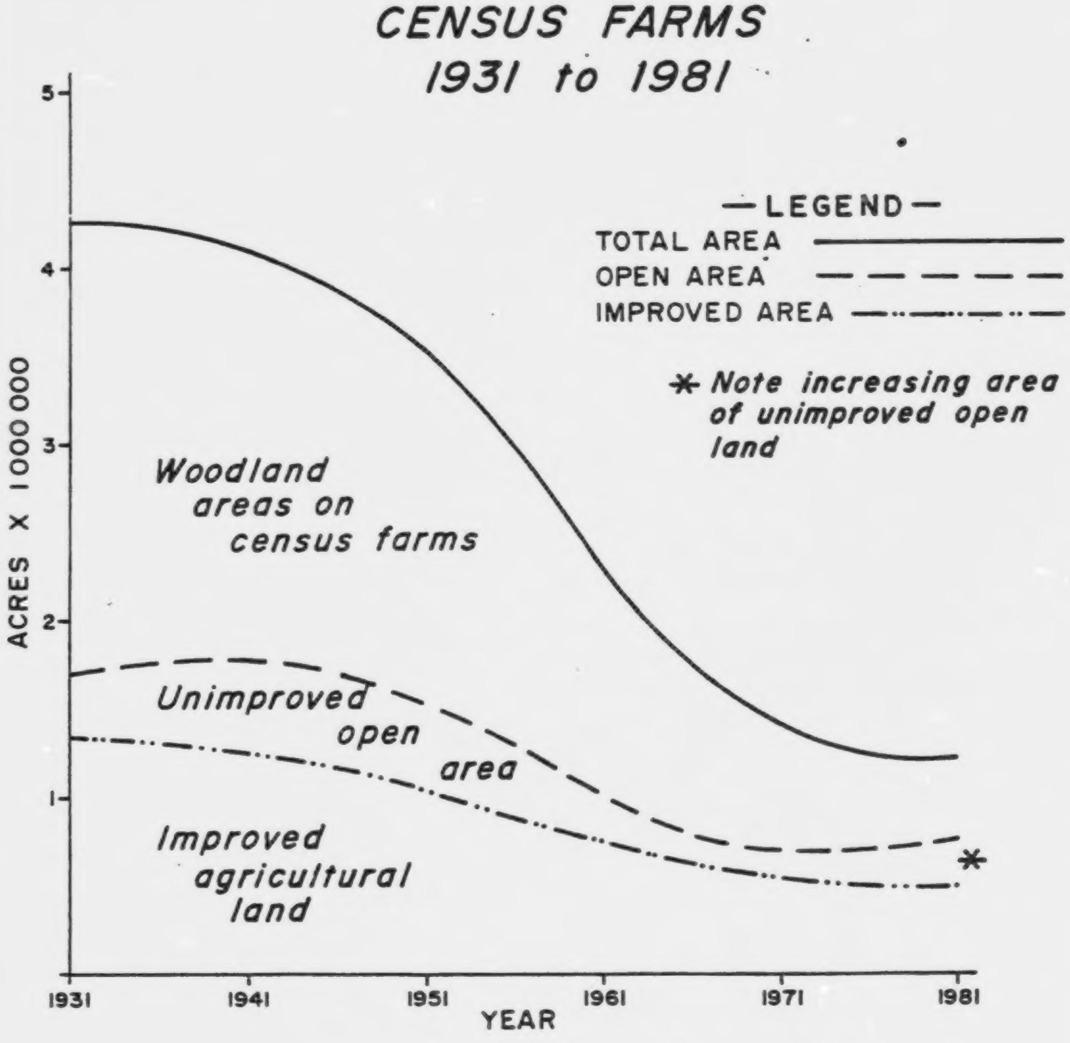
1931 TO 1981



N. B. FARM SIZE CHANGE

AVERAGE 1931 TO 1981

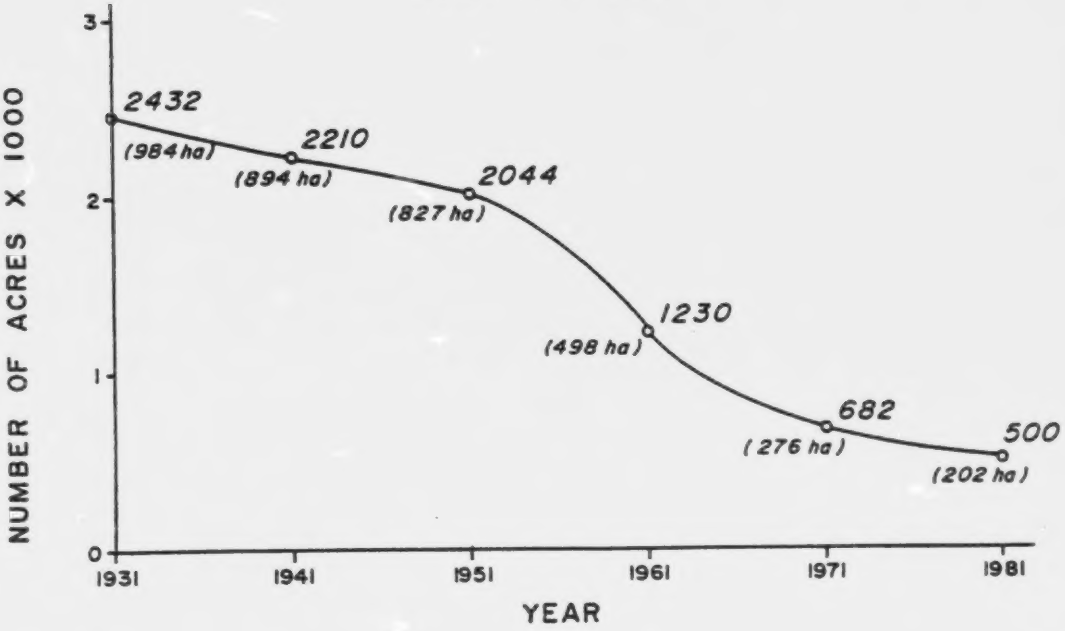
Source: Statistics Canada.

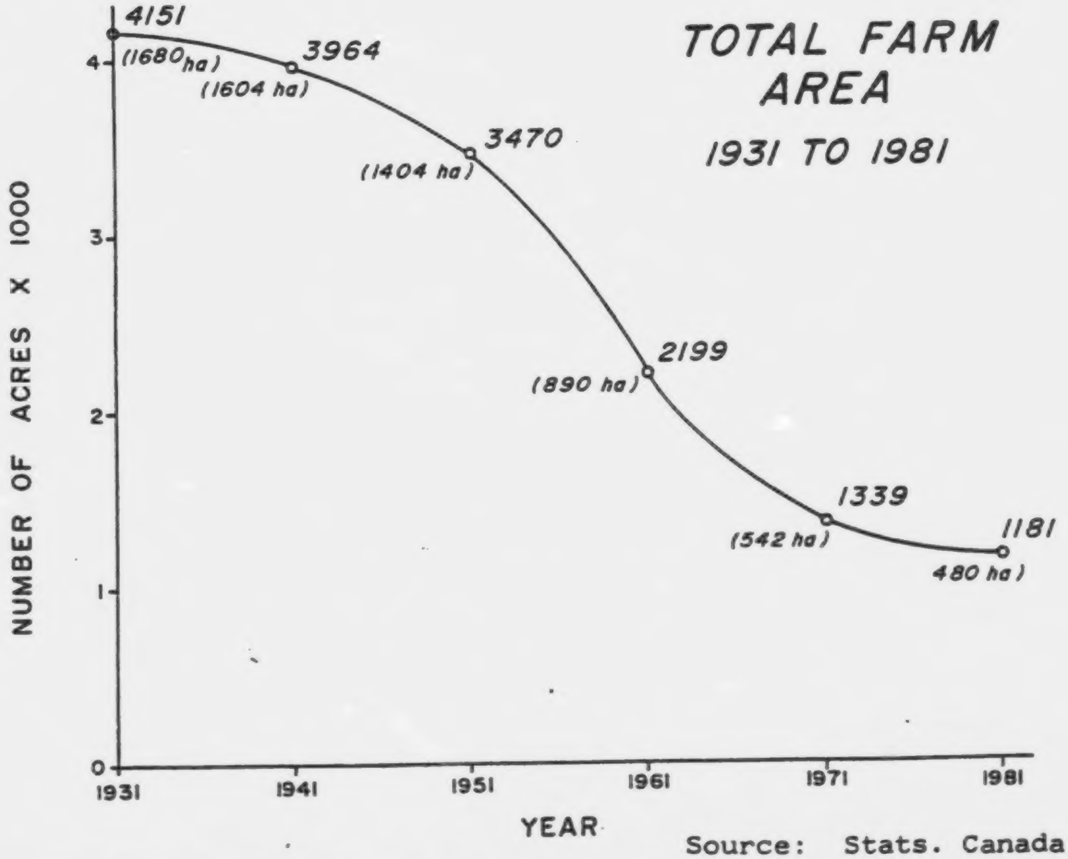


## CENSUS FARMS
## 1931 to 1981

Source : Statistics Canada

# WOODLAND AREAS ON CENSUS FARMS
## 1931 TO 1981





TOTAL FARM AREA
1931 TO 1981

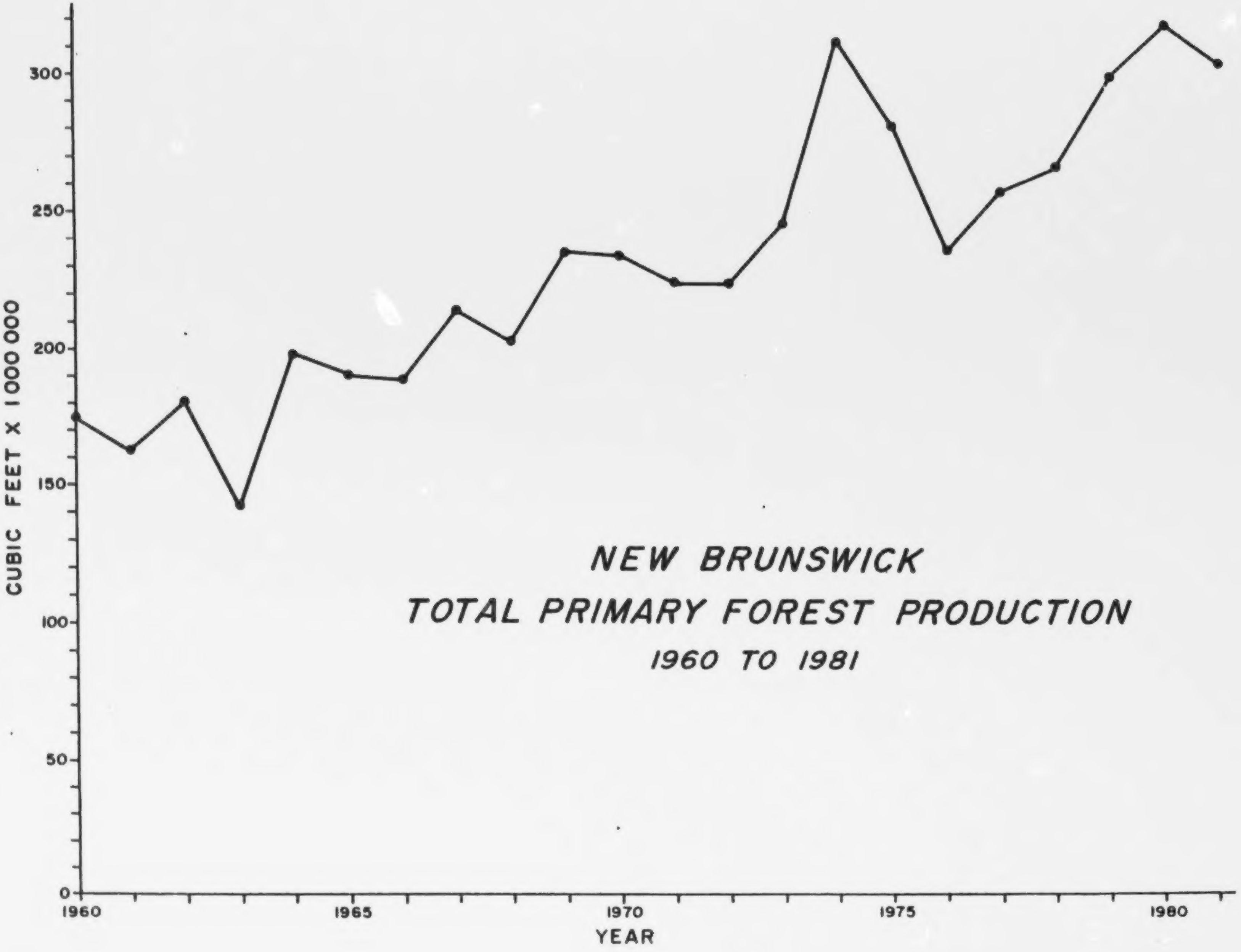
Source: Stats. Canada

# AGRICULTURAL LAND USE IN NEW BRUNSWICK

Area in production in 1981 and projected area for 1983 from Department of Agriculture Commodity Strategies as revised 1982.

Area in hectares

| Crop | 1981 | 1983 | Per cent change per annum |
|---|---|---|---|
| Potatoes | 21,200 | 21,200 | 0 |
| Apples | 480 | 533 | + 5.5 |
| Strawberries | 260 | 303 | + 8.3 |
| Blueberries | 4,000 | 6,102 | +26.3 |
| Vegetables | 4,010 | 4,760 | + 9.4 |
| Grain | 27,600 | 32,624 | + 9.1 |
| Forage | 70,000 | 77,000 | + 5.0 |
| Pasture | 36,000 | 39,600 | + 5.0 |
| TOTALS: | 163,550 | 182,122 | + 5.7 |

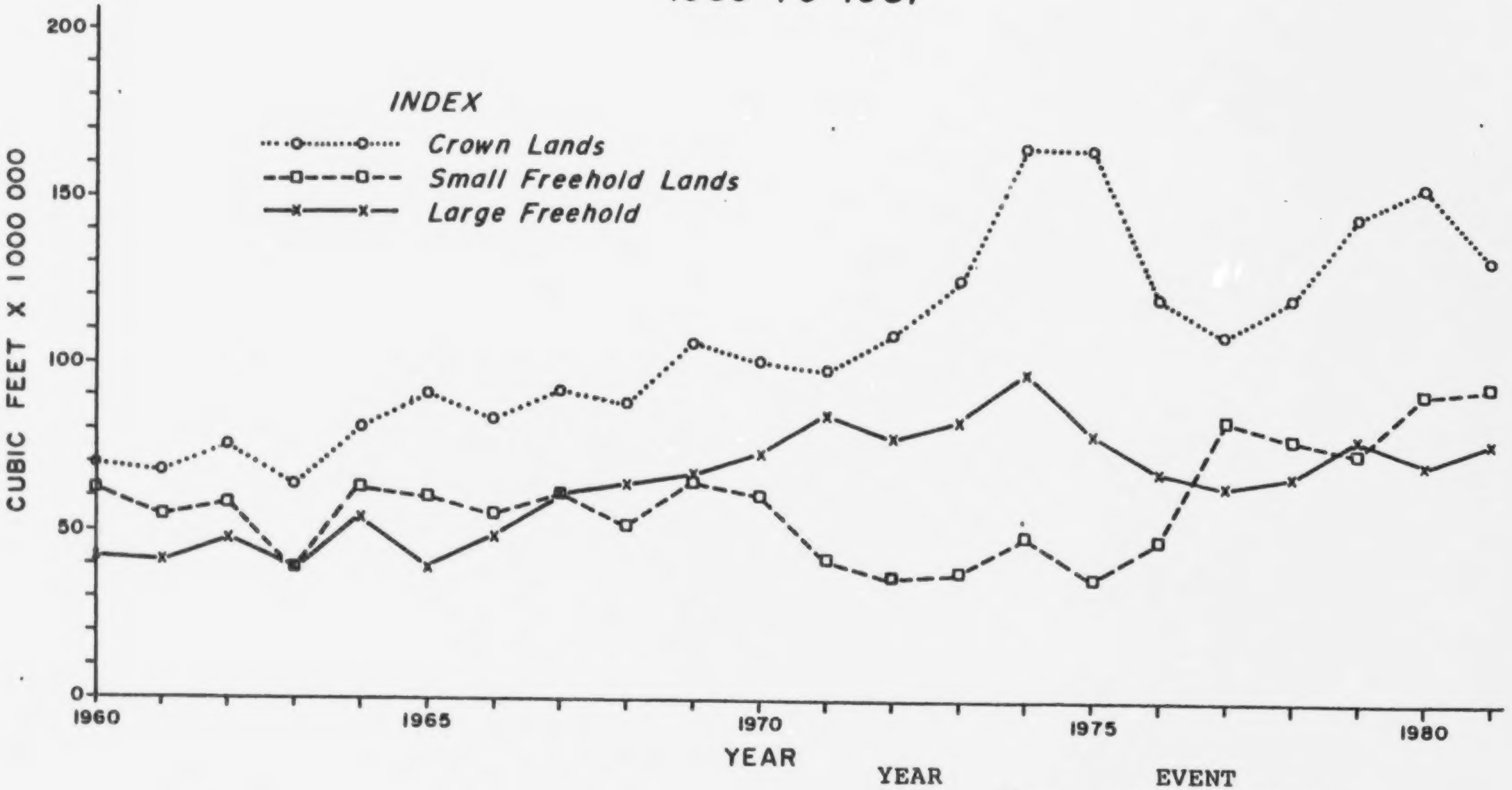


NEW BRUNSWICK
TOTAL PRIMARY FOREST PRODUCTION
1960 TO 1981

Source: D.N.R.

# NEW BRUNSWICK PRIMARY FOREST PRODUCTION

## 1960 TO 1981



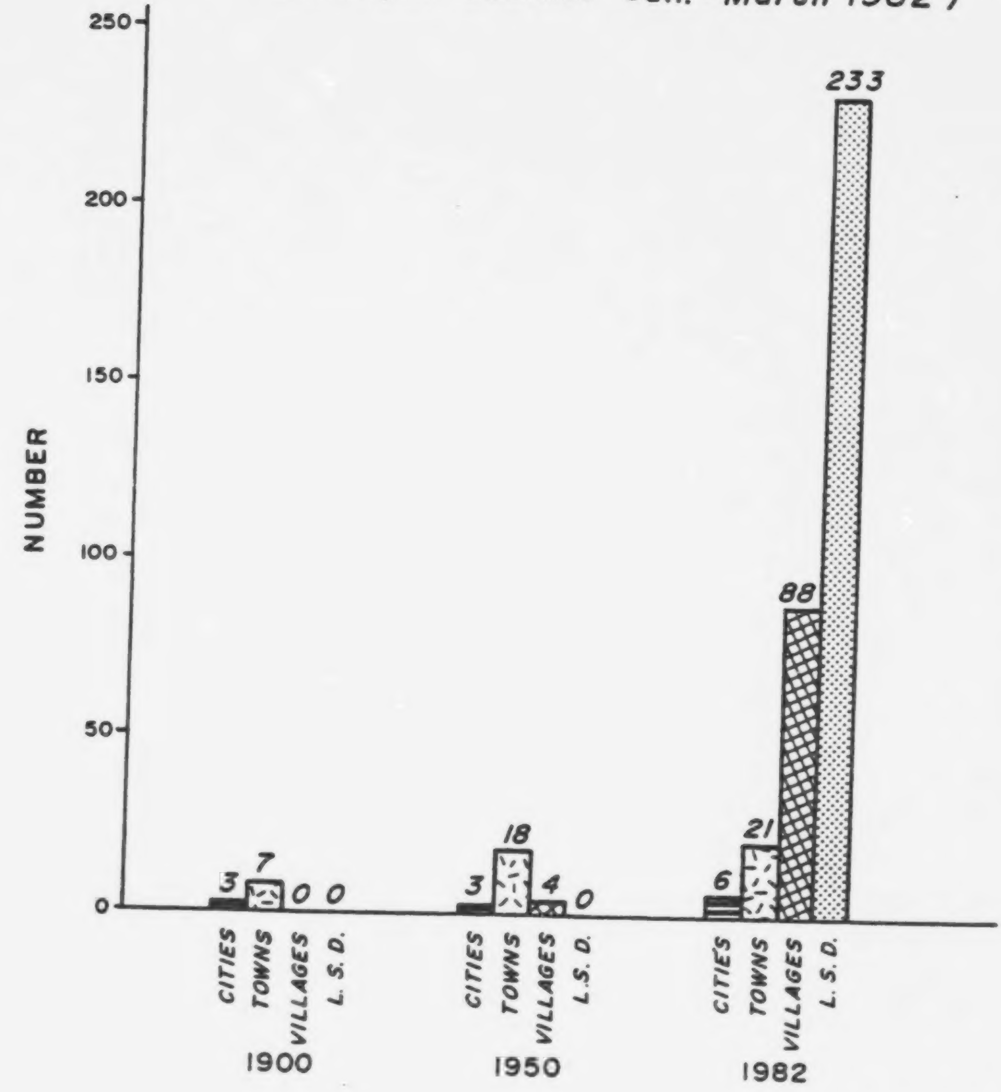
| YEAR | EVENT |
|---|---|
| 1963 | First Marketing Board |
| 1976 | Crown "Residual wood supplier" policy |

Source: D.N.R.

# MUNICIPAL STATISTICS

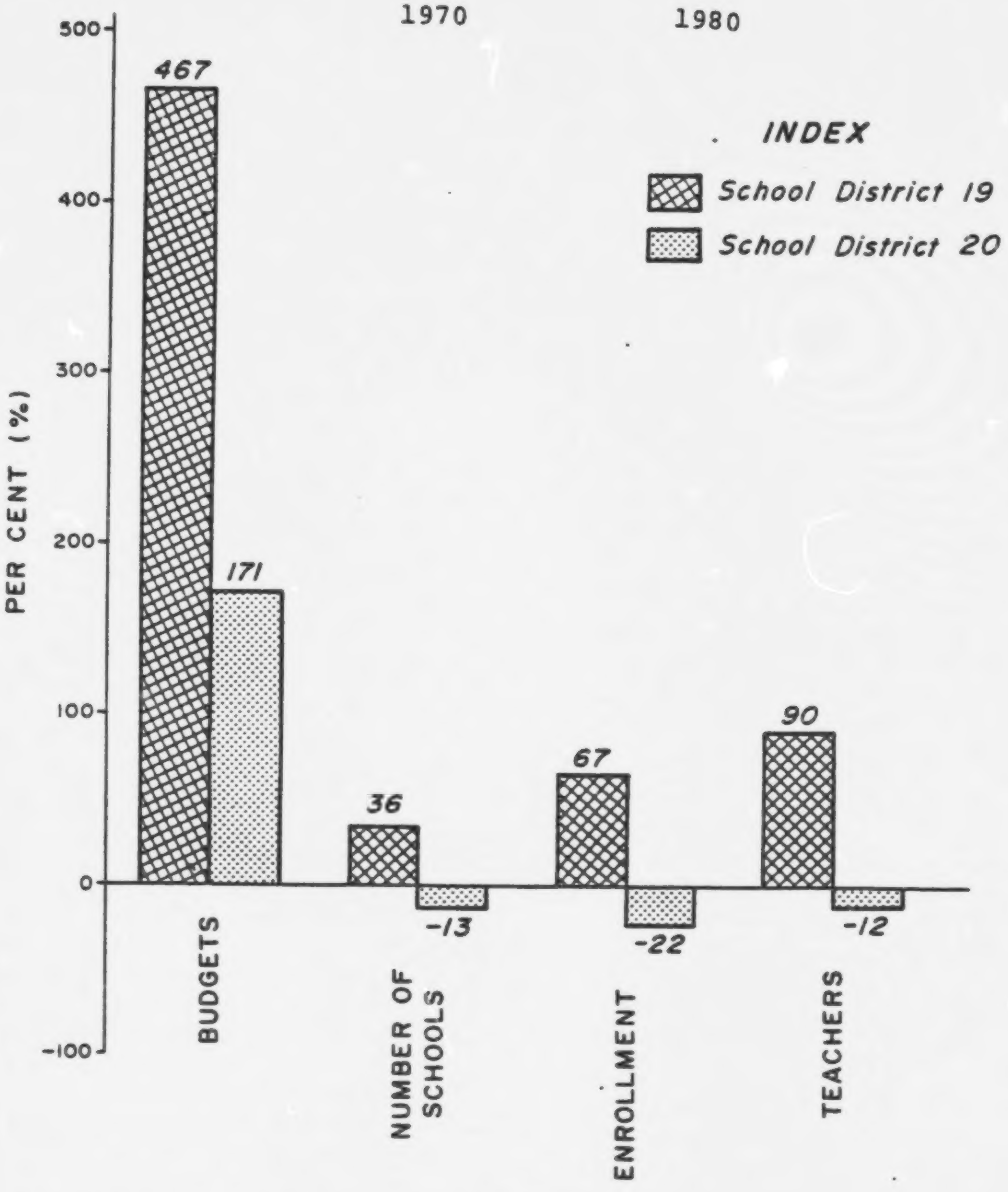
JANUARY 1, 1982

(Municipal Journal Jan.-March 1982)



Source: Dept. of Municipal Affairs

# EFFECTS OF REDISTRIBUTION OF PUPILS FROM SAINT JOHN (School District 20) TO KINGS COUNTY WEST (School District 19)



Source; Dept. of Education Statistics

# APPENDIX K

# APPENDIX K

## FARMLAND IDENTIFICATION PROGRAM

| | | Page |
|---|---|---|
| 1. | Farmland Identification Program - F.L.I.P. | K 1 |
| 2. | F.L.I.P. Acreage and Taxes Deferred by County | K2 |
| 3. | F.L.I.P. Land Registered | K3 |
| 4. | Deferred Taxes - F.L.I.P. | K4 |
| 5. | Regulations | K5 |
| 6. | Some Typical Questions and Answers Relating to F.L.I.P. | K9 |

# FARM LAND IDENTIFICATION PROGRAM (F.L.I.P.)

The Farm Land Identification Program was begun in 1978 to encourage the preservation of land for agricultural uses.

A total of 4,521 parcels of land were registered under the F.L.I.P. program for the 1982 Assessment and Tax Roll.

This comprises approximately 550,000 acres (220,000 hectares) of land of which 262,318 acres (104,927 hectares) is cleared and 287,728 acres (115,091 hectares) is wooded.

The cleared land is receiving a tax deferral of the $1.50 provincial tax. The total amount of the tax deferral for 1982 is $381,829.

The cumulative amount of deferral for the four years the program has been in effect, 1979 to 1982 is $1,106,972.

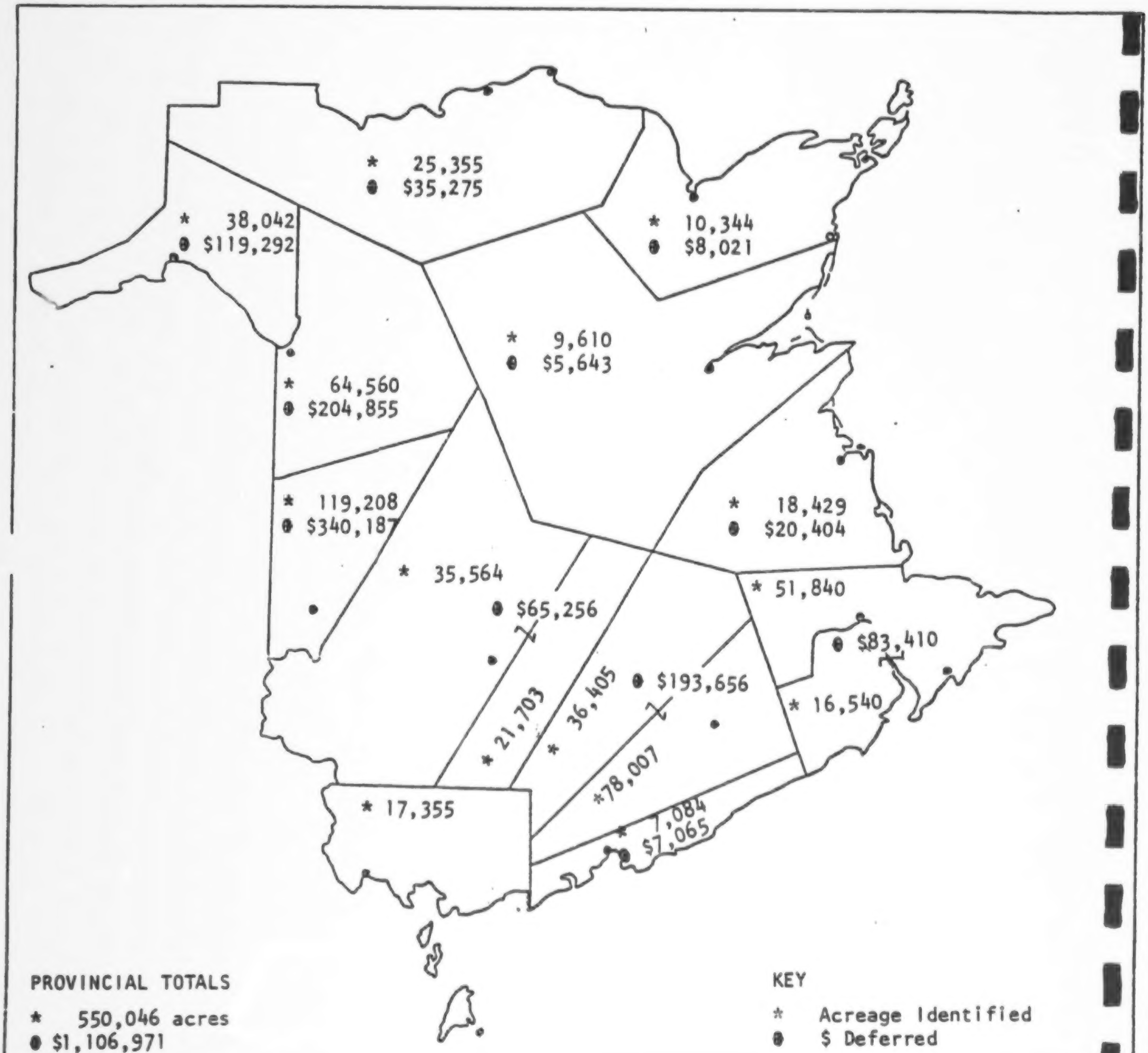
This program was established by amendment to the Real Property Tax Act, Chap. R.2, Sections:

5(6) Notwithstanding subsection 5(1), no taxes are payable in respect to real property registered under the farm land identification program established pursuant to the regulation, subject to the terms and conditions prescribed by regulations.

5(7) Where real property registered pursuant to the farm land identification program ceases to be registered thereunder as a result of a breach of any term or condition prescribed by the farm land identification program, the person in whose name the real property is assessed is liable to pay in respect of that real property the taxes including penalty that would have been payable if the real property had not been registered, from the date of the registration of the real property to the date the real property ceased to be registered, or ten years, whichever is less.

Source: Department of Agriculture and Rural Development.

## FARM LAND IDENTIFICATION PROGRAM 1982/04/01
## TOTAL ACREAGE REGISTERED AND TAXES DEFERRED TO DATE


* 25,355
● $35,275
* 38,042
● $119,292
* 10,344
● $8,021
* 9,610
● $5,643
* 64,560
● $204,855
* 119,208
● $340,187
* 18,429
● $20,404
* 35,564
● $65,256
* 51,840
● $83,410
● $193,656
* 16,540
* 21,703
* 36,405
*78,007
* 17,355
* 7,084
● $7,065
PROVINCIAL TOTALS
* 550,046 acres
● $1,106,971
KEY
* Acreage Identified
● $ Deferred

Source: Department of Agriculture and Rural Development.

## LAND - REGISTERED IN FARMLAND IDENTIFICATION PROGRAM to 1982/04/01

| COUNTIES | PARCELS | | | | PERSONS (Est.) | | | | ACREAGES | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1979 | 1980 | 1981 | 1982 | 1979 | 1980 | 1981 | 1982 | 1979 | 1980 | 1981 | 1982 | TOTAL |
| ALBERT | 88 | 32 | 17 | 6 | 29 | 14 | 14 | 4 | 8383 | 4917 | 2487 | 753 | 16540 |
| CARLETON | 629 | 102 | 36 | 51 | 335 | 65 | 30 | 27 | 92595 | 14001 | 5905 | 6707 | 119208 |
| CHARLOTTE | 88 | 15 | 33 | 25 | 47 | 13 | 22 | 17 | 12345 | 833 | 1903 | 2274 | 17355 |
| GLOUCESTER | 76 | 45 | 17 | 9 | 54 | 16 | 5 | 6 | 5950 | 2955 | 957 | 482 | 10344 |
| KENT | 76 | 34 | 43 | 57 | 42 | 16 | 26 | 28 | 8102 | 2441 | 2974 | 4912 | 18429 |
| KINGS | 277 | 113 | 79 | 86 | 177 | 79 | 52 | 46 | 44263 | 14596 | 9225 | 9923 | 78007 |
| MADAWASKA | 266 | 52 | 45 | 29 | 100 | 25 | 22 | 10 | 25698 | 5295 | 3707 | 3342 | 38042 |
| NORTHUMBERLAND | 40 | 20 | 14 | 29 | 32 | 16 | 11 | 10 | 3575 | 2005 | 2113 | 1917 | 9610 |
| QUEENS | 159 | 62 | 33 | 34 | 69 | 41 | 25 | 15 | 20990 | 8102 | 3959 | 3354 | 36405 |
| RESTIGOUCHE | 185 | 76 | 16 | 4 | 63 | 11 | 9 | 3 | 15897 | 6664 | 2497 | 297 | 25355 |
| ST. JOHN | 18 | 5 | 7 | 10 | 4 | 6 | 6 | 2 | 2901 | 1957 | 829 | 1397 | 7084 |
| SUNBURY | 72 | 14 | 23 | 35 | 30 | 10 | 11 | 9 | 13056 | 1452 | 4599 | 2596 | 21703 |
| VICTORIA | 394 | 42 | 14 | 34 | 204 | 25 | 13 | 21 | 53102 | 5176 | 1561 | 4721 | 64560 |
| WESTMORLAND | 163 | 84 | 93 | 118 | 83 | 53 | 45 | 42 | 24629 | 10211 | 7227 | 9773 | 51840 |
| YORK | 118 | 76 | 59 | 44 | 84 | 57 | 44 | 21 | 15791 | 7482 | 8030 | 4261 | 35564 |
| PROVINCE OF N.B. | 2649 | 772 | 529 | 571 | 1353 | 447 | 335 | 261 | 347277 | 88087 | 57973 | 56709 | 550046 |
| TOTAL | 4521 | | | | 2396 | | | | 550046 | | | | |

Source: Department of Agriculture and Rural Development

82/04/01

## THE DEFERRED TAXES PER COUNTY

| | REGION & COUNTY | 1979 | 1980 | 1981 | 1982 | TOTAL AT PRESENT |
|---|---|---|---|---|---|---|
| A. | MADAWASKA | $ 19354.73 | $ 24544.22 | $ 31429.67 | $ 43963.43 | $ 119292.05 |
| B. | VICTORIA | 45205.09 | 49833.59 | 51243.54 | 58573.39 | 204855.61 |
| C. | CARLETON | 59332.51 | 68698.60 | 102438.25 | 109717.13 | 340187.19 |
| D. | SUNBURY & YORK | 8448.18 | 12858.24 | 19406.22 | 24544.23 | 65256.87 |
| E. | KINGS & QUEENS | 25347.04 | 40118.61 | 56962.38 | 71228.74 | 193656.77 |
| F. | CHARLOTTE | 3024.44 | 3378.22 | 7759.34 | 9740.09 | 23902.09 |
| G. | SAINT JOHN | 685.13 | 1053.08 | 2401.28 | 2925.93 | 7065.42 |
| H. | ALBERT & WESTMORLAND | 10989.07 | 16771.28 | 23598.40 | 32052.12 | 83410.87 |
| I. | KENT | 1040.42 | 2859.79 | 7427.31 | 9077.02 | 20404.54 |
| J. | NORTHUMBERLAND | 551.55 | 762.75 | 1861.87 | 2467.05 | 5643.22 |
| K. | GLOUCESTER | 1452.17 | 1937.33 | 2059.90 | 2572.14 | 8021.54 |
| L. | RESTIGOUCHE | 5624.41 | 7209.77 | 7473.65 | 14967.65 | 35275.48 |
| | PROVINCE OF N.B. | $181054.74 | $230025.48 | $314061.81 | $381829.62 | $1106971.65 |

# REGULATION 78

under the

# REAL PROPERTY TAX ACT

## (Farm Land Identification Program)

1. In this Regulation

"Department" means the Department of Agriculture and Rural Development;

"Registrar" means the person appointed under section 2 of the Act;

"farm land" means land registered under the Program;

"Minister" means Minister of Agriculture and Rural Development;

"Program" means the Farm Land Identification Program;

2. The Minister shall appoint a Registrar of the Program.

3. The Registrar shall maintain a register of farm land.

4. The following land shall be eligible for registration under the Program;

(a) land used for the production of agricultural products;

(b) land capable of being used for agricultural production in the year of application; and

(c) land which is being cultivated from time to time or managed for the production of food for humans or livestock.

5. No land shall be registered under the Program unless it is at least two hectares in area.

6. Notwithstanding section 4, no land shall be registered under the Program if it cannot be classified as land capable of use for agricultural purposes on a commercial basis at the time of application for registration under the Program.

7.(1) Every person wishing to have land registered under the Program shall make application to the Registrar.

7.(2) Applications for the registration of land received after the 1st day of August of any year may not be considered until the following year.

8. Land registered under the Program in any year shall continue to be registered in subsequent years for so long as it meets the criteria set out in section 4.

9. In the event that land registered under the Program ceases to meet the requirements of section 4, it shall be deregistered by the Registrar but such action shall not be taken except after 30 days notice to the owner of the land, mailed to his address as listed in the records of the Registrar.*

10. The owner of land that has been registered may apply to the Registrar to determine whether a proposed use may result in deregistration of the land under the Program, and the Registrar, upon receiving such a request shall, after due investigation issue a certificate stating his position on the matter.

11.(1) There shall be a Board appointed by the Minister to be known as the Farm Land Identification Program Appeal Board consisting of five members, one person representing the Department, one person representing the Department of Municipal Affairs and three members who are agricultural producers.

11.(2) The Minister shall appoint one of the members of the Board to be the Chairman and another to be the Vice-Chairman.

11.(3) The Minister may appoint a Secretary of the Board.

12.(1) Any person dissatisfied with a decision of the Registrar may appeal the decision to the Board by serving upon it not more than sixty days after he has notice of the decision, written notice of his appeal stating that he request the matter in dispute to be determined by the Board.

12.(2) Every notice of appeal under subsection (1) shall contain a statement of the matter being appealed and the name and address of the person making the appeal.

12.(3) Upon receipt of a notice of appeal under subsection (1), the Board shall forthwith notify the Registrar and the Registrar shall thereupon provide the Board with every document he has pertaining to the matter.

12.(4) Upon receipt of a notice of appeal under subsection (1), the Board shall, not more than seven days after it received the notice, serve upon the person making the appeal and upon the Registrar, written notice of the time and place of the appeal is to be heard.

12.(5) The Board shall hear the appeal not more than fifteen days after it received notice of appeal but it may, at the request of the person appealing, adjourn the appeal for such period of time as it considers appropriate.

12.(6) The Board may, on an appeal under this section, dismiss the appeal or vary the decision of the Registrar.

*Where real property registered pursuant to the Farm Land Identification program ceases to be registered thereunder as a result of a breach of any term or condition prescribed by the Farm Land Identification Program, the person in whose name the real property is assessed is liable to pay in respect of that real property the taxes including penalty that would have been payable if the real property had not been registered, from the date of the registration of the real property to the date of the real property ceases to be registered, or ten years, whichever is less.

## Some Typical Questions and Answers Relating to the Farm Land Identification Program

1. What is the Farm Land Identification Program?

   "It is a program which is designed to exclude farm land identified for farm use from the $1.50 per $100.00 assessment of provincial real property tax."

2. Why is a program of this nature being sponsored by the Government at this time?

   This program is being sponsored to encourage the preservation of agricultural land for agricultural use and to combat land use development trends that prejudice the maintenance of a viable and vigorous agricultural industry.

3. What land is eligible under this program?

   The following land is eligible for registration under this program:

   (a) land used for the production of agricultural products,

   (b) land capable of being used for agricultural production in the year of application, and

   (c) land which is being cultivated from time to time, or managed for the production of food for humans or livestock.

   The minimum size for registration under the program is two hectares (5 acres) in area.

   No land shall be registered under the program if it cannot be classified as land capable of use for agricultural purposes on a commercial basis at the time of application for registration under the program.

4. Who is eligible to have their land registered under this program?

   Any land owner whose land meets the conditions as set out in question #3.

5. Does the occupation of the land owner make any difference as to whether or not the land can be registered?

   No, because the program is designed to identify land based on the use to which the land is being put, not the occupation of the owner.

6. What does identification of land mean?

   Identifying farmland means that the owner declares that he intends to keep that land in agriculture and that he will not do anything to that land which will make it impractical to use it for agriculture in the future.

7. Can I register a portion of my farm and exclude from the registration program another portion of my farm?

   Identification of property will be based on the fact that there is a distinguishable deed for that parcel. When a parcel of land is identified all the agricultural land on that parcel is included. Each deeded parcel of land shall require a separate identification by the owner. If an owner wishes to register only part of his agricultural land it must have a separate deed.

8. If I wish to subdivide my farm into either a single lot subdivision or a number of subdivisions, what effect does this have on my registration program?

   The land owner must notify the Registrar of the Farm Land

Identification Program of any intended subdivision of identified land and of any change in use which might change the eligibility of this land under the program. Any change in use or designation of identified property without the written agreement of the Registrar might be cause for deregistration and a subsequent tax roll back with interest.

9. If my son or daughter wishes to build a house and I wish to subdivide a single lot for them how does this affect my registration under the Farm Land Identification Program?

It is policy of the New Brunswick Department of Agriculture that subdivision to allow for the housing of persons directly involved in the farming operation will not affect the status of a property that is identified. However, this should be done only after consulting the Registrar and obtaining a document from the Registrar or his delegate indicating agreement to the proposed subdivision. This policy is in effect only so long as the occupant of the subdivision is directly involved in the farming operation. Extenuating circumstances will be dealt with on an individual basis.

10. What happens if my farm is registered under this Program and I sell it to another farmer?

This program is designed to identify the farmland and not the owner. Once a property is identified it will remain identified until deregistered. If subsequent owners do not change the use, the identification remains valid.

11. What happens if my farmland is registered under this Program and I sell it to a land developer?

As this program registers the land and not the owner, the property will remain registered when it is sold. If the new owner changes the use of the land contrary to the Farm Land Identification Program regulations, then he will be required to pay the back taxes with interest.

12. If I wish to change the use of land that is identified, does this mean that I will have to pay back taxes on the land that I have changed the use of?
    Depending on the type of change and the manner on which the use is changed, the back taxes may or may not come due. Any proposed changes should be discussed with the Registrar. All decisions of the registrar are subject to appeal by the land owner to the Farm Land Identification Program Appeal Board.
13. Do I have to apply for registration every year?
    No. Once land is registered it will remain in the Program until deregistered.
14. If I live in a municipality, does this Program affect my land taxes?
    As stated in question number one, this program applies only to $1.50 per $100.00 assessment of provincial real property tax and has no bearing on municipal tax rates. Note: You, as a land owner, pay both a provincial real property tax and a municipal tax.
15. Why do I have to apply before August 1st of any year?
    To ensure that your identified property is recorded on the tax rolls prior to January 1, and thereby guaranteeing a tax deferment for the next year. Applications received after August 1st may not be processed in time to guarantee inclusion on the tax rolls of January 1st of the next year and the tax deferment might not take effect until one year later.

# APPENDIX L

# APPENDIX L

# COORDINATION OF LAND INFORMATION

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2. Proposed Mapping Policy L4

3. The Need for Coordination in Acquiring Digital Data Management System L8

4. Some Inter-departmental Committees Relating to Land Use L12

5. Proceedings at L.I.S. 90 No. 3, March, 1982 L15

## Provincial Mapping Committee

A report on an "Overall Mapping Policy for New Brunswick" was presented to the Official's Committee on Economic Development for its consideration in June 1981.

The Committee decided that the proposed Overall Mapping Sub-Committee will report to the Official's Sub-committee on Land Use Policy. As well, the N.B. Remote Sensing Committee will become a Technical Committee to the Overall Mapping Sub-committee.

With the above in mind the Official's Committee on Economic Development Policy agreed to establish an Overall Mapping Sub-committee with Mr. Robert Scammell, Department of Justice as Chairman. The Sub-committee will ensure that:

(a) All Provincial government monumentation, surveying, land relatable data collection and mapping be within the framework of a coordinated policy;

(b) it is representative of the user community;

(c) it builds on the strengths of the existing process and resources to evolve a long term policy for coordination of all the resources existing and needed to optimize the procurement and management of land related information.

The sub-Committee's Terms of Reference will be as follows:

## Terms of Reference

(a) To develop and maintain an inventory of surveying, mapping and land relatable data collection activities.

(b) To develop schedules with recommended priorities of mapping requirements on a short and long term basis with annual update.

(c) To provide recommendations on necessary steps to accomplish (b) (above).

(d) To provide opportunities for the user community to maintain awareness of relevant technological development.

(e) To monitor and recommend on research proposals, relevant to surveying, mapping and land relatable data collection activities.

(f) To encourage utilization of technological enchancements for Provincial advantage.

(g) To provide effective liaison with Provincial representatives of any provincially supported surveying, mapping or land related data collection agency.

(h) To provide a coordinated interface with relevant external agencies to provide effective two-way communication.

(i) To recommend appropriate mechanisms to provide surveying, mapping and land related data collection products to the user community on a timely and economical basis.

(j) To provide agreed standards and specifications for such elements of policy as are necessary for the collection, storage, interpretation and availability of data.

The Committee also decided that the Sub-Committee should consist of representatives of the Departments of Agriculture, Environment, Municipal Affairs, Transportation, Tourism, N.B. Power Commission and Natural Resources.

(Report prepared for the N.B. Mapping Committee) L4

DRAFT
1981 04 23

## (Proposed)
## N.B. Mapping Policy:

### Introduction

Many departments and governmental agencies regulate and collect basic land information for the multitude of activities that occur on the land, each separately recording only enough information to meet its particular requirements.

Many departments and agencies and even units within them, store information on orthophotos or planimetric maps developed "in house" or acquired from another source at many scales and varying degrees of accuracy.

There is no single government entity to ensure the production and delivery of required maps. There is no single entity to "bank" assorted data in a raw or manipulation state for broader use by users other than an originator; nor is an entity responsible for assuring that the data can be compared or integrated. Thus, Government unintentionally collects again and again, the same basic information about the same areas of land and has no common base which can be used and relied on by those who must make land related decisions.

In other words, the present system within Government for recording data about "land", our most basic resource, is disparate, piecemeal, less than effective, expensive and needs to be thoroughly overhauled.

## Needs

1. There is need for a long term cooperative and properly financed intragovernmental effort to change significantly the historic and traditional ways of collecting, displaying, recording and maintaining information on "land".
2. There is a pressing need for an available common base on which additional information may be superimposed, available to all who make land related decisions.
3. There is a need for cordination within Government to develop and maintain an acceptable common information base.

## Strategy

1. The acceptable common information base should be a complete coverage of the Province on accurate line or planimetric maps at agreed scales available as soon as possible.
2. There should be an interdepartmental and government agency committee to monitor the implementation and effectiveness of a mapping programme and to advise Government on mapping and information recording policies.

   Specifically such a committee would be involved in:

   (a) the development, review and adjustment of map requirements within Government;

   (b) the recommendation of ways to achieve (a);

(c) the recommendation of appropriate mechanisms to provide base mapping and additional data layers to the user community on a timely and economical basis;

(d) providing effective liaison with provincial representatives on any provincially supported map or thematic data producers;

(e) the monitoring and development of recommendations to Government on research proposals relevant to mapping and data recording; and

(f) setting standards for collecting and recording data for an integrated system of land information.

3. There should be a small Secretariat established within Government (possibly in the formative stages under the aegis of the Cabinet Secretariat) to work full time on the development of the provincial mapping policy and the implementation of programmes which will be required for its success.

Specifically such a Secretariat would be involved in:

(a) providing information to the interdepartmental committee and carrying out activities the committee may require of it;

(b) setting up and maintaining an inventory of activities, products and requirements for mapping and data storage;

(c) providing a central government unit to interface with other levels of government;

(d) keeping the user community up to date on relevant technological developments; and

(e) advising Government on budgets and the cost effectiveness of programmes.

## Benefits

There are a number of benefits which will derive from an integrated land information system. First, the demand by the user community will compel the production of accurate base maps which are the vital foundation to such a system. Further, such a system will allow a departure from the traditional governmental focus on specific problems towards a properly controlled and complete approach to handling land information.

There should be overall savings to government of dollars and manpower by improving the methods of collecting, storing, displaying and maintaining information.

Duplication of effort and incompatibility of products between originators and users would be greatly reduced if not eliminated through the assignment of authority to a formalised committee or secretariat. Finally, gaps in an information system and duplication of effort will be readily apparent in a comprehensive and unified approach to mapping and the recording of additional data for management purposes.

T. E. Sifton
1981 04 23

# THE NEED FOR CO-ORDINATION IN ACQUIRING DIGITAL DATA MANAGEMENT SYSTEMS

## (OVERALL MAPPING SUB-COMMITTEE)

Digital data management of resource and land information is fast becoming the accepted way to handle the vast amounts of data gathered, manipulated and displayed for planning, decision making, management and administrative purposes. There are many commercial firms developing programs and systems who are eager to find buyers of such systems. It is a very competitive market from the seller's point of view because of the high cost of developing the software (programs) and hardware (machinery) and the limited number of buyers who can afford to purchase a system.

One of the prime markets is the resource and land-related organisations, departments and agencies which have to collect and process large amounts of data in order to carry out their specific mandates. In New Brunswick, digital data management systems are on the horizon while other jurisdictions, such as Alberta and British Columbia, already have them in place but are experiencing problems.

These problems stem from the fact that no one system is all things to all users and no two competitive systems can interchange information without a great deal of additional and expensive work. New Brunswick has time to avoid such problems if the user community will get together and identify what it is that each user expects as the end results of a digital exercise. If this is done there will evolve from this analysis a "core" of information requirements which will be common to all users. This "core" should be documented and be used in developing a set of specifications which any vendor must address and prove capable of delivering if a system is acquired in New Brunswick. These specifications, common to all users, will allow the transfer of information from one user to another in useable form and should allow particular peripheral requirements to be tied in as well.

If such a set of specifications is not developed, the experience in other jurisdictions indicates that there will eventually be several expensive systems in place in New Brunswick, each serving one client and probably unable to interchange common information from one to another.

The benefits of a common approach by the user community are uniformity, better buying power, wider usage and stronger industry back-up.

The establishment of the New Brunswick Government of the Deputy-Minister's Committee on Land Use and the Sub-committee on Mapping and Related Information will address the problems, already identified by resource and land-related managers, that there is a lack of co-ordination in the acquisition, display and availability of information common to such managers and the recommendation that an acceptable common information base be developed and maintained. This recommendation by users of such information is even more pertinent for the digital systems because, with no co-ordinated approach to acquisition and integration, the same problems will probably arise as in the present system but at a much higher cost.

If the digital processing industry, as a whole, is aware that a group of potential buyers has developed a set of specifications, it will be in their interest to positively apply themselves to producing what those buyers are seeking. It is also in the seller's interest to develop a very good system because if the first vendor responds well to the first buyer's requirements which include the "core" specifications, that vendor in all likelihood has to be in an advantageous position to sell the next system within the same community. The enlarged market potential and a more knowledgeable buyer will attract good vendor response rather than allow vendors to tell the buyer what he (the buyer) should have.

There is presently in the Province and throughout the Maritimes a limited pool of experts capable of running and maintaining digital data management systems. If each user is tied to a different system the expertise will generally be limited to that system and there will not be sufficient experts to serve that user community. It will be more profitable to users of common or compatible systems to be able to call on the experience of each others in-house experts to help with software and program problems. If this were the case compatible systems would have common problems and the resolution of a problem in one system should lead to a quick resolution in others.

Finally, there is back-up. At the moment there is next to no related industry back-up in the Maritimes, especially on the hardware side. Maintenance people are in Toronto or as far away as California. With the potential delivery of several systems in the Province, a vendor would be encouraged to establish an office here or in the Region as an additional service to buyers.

In summary, digital data management systems are just about to break into the Maritimes. If the potential users cannot get together and define what it is that is needed in a system then vendors will pick off each buyer, one at a time and the resulting incompatibility of systems will leave users in as poor or worse a situation as they are at present.

Time spent now in a co-ordinated effort to define the information needs of individual users who will use digital data management systems will be repayed in a more knowledgeable user community, better able to identify the products they need, and in turn will lead to stronger responses to, and bargaining with, vendors when a system is to be acquired.

## ENVIRONMENT NEW BRUNSWICK

## SOME INTER-DEPARTMENTAL COMMITTEES RELATED TO LAND USE

(as at May 19, 1982)

| COMMITTEE NAME | DATE ESTABLISHED | PARTICIPATING AGENCIES |
|---|---|---|
| 1. Provincial Planning Committee (Provincial Planning Board, 1968) | 1973 | N.B. Dept. of Transportation<br>Environment New Brunswick<br>N.B. Dept. of Agriculture & Rural Development<br>Health New Brunswick<br>N.B. Dept. of Natural Resources |
| 2. Water Well Advisory Board | 1973 | Environment New Brunswick<br>Health New Brunswick<br>N.B. Dept. of Natural Resources<br>N.B. Dept. of Municipal Affairs<br>N.B. Dept. of Labour |
| 3. New Brunswick Soils Survey Committee | 1975 | Environment New Brunswick<br>N.B. Dept. of Transportation<br>N.B. Dept. of Agriculture & Rural Development |
| 4. Pesticides Advisory Board | 1975 | Health New Brunswick<br>Environment New Brunswick<br>N.B. Dept. of Natural Resources<br>N.B. Dept. of Agriculture & Rural Development<br>N.B. Dept. of Labour |
| 5. Maritime Standing Committee on Shellfish | 1975 | Environment New Brunswick<br>N.B. Dept. of Fisheries<br>Environment Canada |
| 6. Canada-New Brunswick Flood Damage Reduction Agreement Steering Committee | 1976 | Environment New Brunswick<br>Environment Canada<br>N.B. Dept. of Municipal Affairs |
| 7. New Brunswick Flood Risk Mapping Technical Committee | 1976 | Environment New Brunswick<br>Environment Canada<br>N.B. Dept. of Natural Resources<br>Canada Dept. of Energy, Mines & Resources |
| 8. Marsh Creek Steering Committee | 1976 | Environment New Brunswick<br>Environment Canada<br>Municipal Affairs<br>City of Saint John |

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Prepared by Environment New Brunswick for the Land-Use Policy Task Force

| | COMMITTEE NAME | DATE ESTABLISHED | PARTICIPATING AGENCIES |
|---|---|---|---|
| 9. | Environmental Monitoring of Forest Insect Control Operations (EMOFICO) | 1976 | Agriculture Canada<br>Environment Canada (Fisheries & Oceans)<br>Environment New Brunswick<br>N.B. Dept. of Natural Resources<br>Health New Brunswick<br>Forest Protection Limited (FPL)<br>University of Toronto<br>Montreal Engineering Company<br>Washburn & Gillis<br>Research & Productivity Council<br>Various Provincial & State Representatives |
| 10. | Land Management Advisory Committee | 1977 | Environment New Brunswick<br>N.B. Dept. of Natural Resources<br>N.B. Dept. of Transportation<br>Tourism New Brunswick |
| 11. | New Brunswick Meteorological Committee | 1977 | Environment New Brunswick<br>N.B. Dept. of Agriculture & Rural Development<br>Environment Canada (Canadian Forestry Service) |
| 12. | Kings County Resource Development Committee | 1978 | Environment New Brunswick<br>N.B. Dept. of Natural Resources<br>N.B. Dept. of Municipal Affairs<br>N.B. Dept. of Commerce & Development<br>N.B. Dept. of Transportation<br>N.B. Dept. of Labour<br>N.B. Dept. of Social Services<br>N.B. Dept. of Agriculture & Rural Development |
| 13. | Forest Guidelines Committee | 1979 | Environment New Brunswick<br>N.B. Dept. of Natural Resources |
| 14. | International Technical Advisory Committee | 1979 | Environment Canada<br>Maine Dept. of Environmental Protection<br>Quebec Dept. of the Environment<br>U.S. Environmental Protection Agency<br>U.S. Geological Survey<br>Environment New Brunswick |

| COMMITTEE NAME | DATE ESTABLISHED | PARTICIPATING AGENCIES |
|---|---|---|
| 15. N.B. Remote Sensing Committee | Revamped 1980 | N.B. Dept. of Agriculture & Rural Development<br>N.B. Dept. of Fisheries<br>N.B. Dept. of Natural Resources<br>Environment New Brunswick<br>Canada Center for Remote Sensing (E.M. & R.)<br>Private Sector<br>Environment Canada (C.F.S.)<br>University of New Brunswick |
| 16. N.B. Mapping Committee | Revamped 1980 | N.B. Dept. of Natural Resources<br>N.B. Dept. of Municipal Affairs<br>Environment New Brunswick<br>N.B. Dept. of Agriculture & Rural Development<br>N. B. Power<br>N. B. Dept. of Justice |
| 17. Water Supply & Watershed Protection Committee | 1981 | Environment New Brunswick<br>N.B. Dept. of Municipal Affairs<br>N.B. Dept. of Natural Resources<br>N.B. Dept. of Agriculture & Rural Development<br>Health New Brunswick |
| 18. Belledune Environmental Monitoring Committee | 1982 | Environment New Brunswick<br>Health New Brunswick<br>Environment Canada<br>Fisheries & Oceans Canada<br>Brunswick Mining & Smelting Co.<br>Belledune Planning Commission |
| 19. Management Committee -St. Croix Waterway Recreation Area | 1982 | Community Improvement Corp.<br>Environment New Brunswick<br>N.B. Dept. of Historical Resources<br>N.B. Dept. of Natural Resources<br>Tourism New Brunswick |

# ABBREVIATED PROCEEDINGS

of

# LAND INFORMATION SYSTEMS 1990, No. 3

L. I. S. 90 - No. 3

A Workshop Organized and Sponsored by the
Department of Surveying Engineering, U.N.B. at

U. N. B. & Keddy's Motor Inn

March 25 - 26, 1982

Chairman - Angus C. Hamilton, U.N.B.
Assoc. Chairmen - Randy Trenholm, N. B. Dept. of Agriculture
- Franklin Cardy, N. B. Dept. of Environment

Compiled and edited by:

Sue Nichols
Lawrence Eekhout
Bernard Gunning
Vernon Oliver
Femi Falade
Adamo Babalola

# PROGRAMME AND TABLE OF CONTENTS

Thursday, March 25

IN HEAD HALL (ENGINEERING BUILDING)

U.N.B.

| | | Proceedings Page |
|---|---|---|
| 9:00-9:45 | Registration, Room E-51 (Invitation Arrangements) | |
| | **Session I** | |
| 9:45 | Opening remarks - Angus Hamilton | 2 |
| 10:00 | What progress have we made? Recap of previous workshops - Randy Trenholm | 4 |
| 10:20 | Coffee/Tea | |
| | **Session II** | |
| 10:40 | CARIS (Computer-Aided Resource Information System*) - S.E. Masry, J. DeDourek and Y.C. Lee. | 4 |
| 11:15 | Tour of the Digital Mapping Laboratory and a demonstration of CARIS. | 4 |
| 12:15 | Informal lunch (soup, sandwiches, coffee & tea) in Room E-51. | |
| | **IN KEDDY'S MOTOR INN** | |
| | **Session III** | |
| | - What will we be expecting from "The L.I. System" in 1990? Franklin Cardy, Chairman | |
| 2:00 | Forest Management | 6 |
| | Thom Erdle, Forest Management, D.N.R., Fredericton | 6 |
| | David Curtis, N.B. Federation of Wood Producers | 6 |
| | Eric Wang, Fraser Inc., Edmundston | 6 |
| | Agriculture | 7 |
| | John McMillan, Dept. of Agriculture and Rural Development | 7 |
| | Tom Demma, N.B. Federation of Agriculture | 7 |
| | Leo Dionne, Dept. of Biology, U.N.B. | 7 |
| | Land Management | 7 |
| | Tom Sifton, Lands Branch, D.N.R. | 7 |
| | Arnold Boer, Wildlife Section, D.N.R. | 8 |
| | Paul Monti, Dept. of Environment | 8 |
| | Mel Redmond, Fisheries Section, D.N.R. | 8 |
| | Gerry Ward, Dept. of Civil Engineering, U.N.B. | 8 |
| | Economic Development | 9 |
| | Darwin Curtis, Energy Secretariat, Dept. of Finance | 9 |
| | Gordon Smith, Dept. of Tourism | 10 |
| | Nabil Elhadi, Flood Risk Mapping, Dept. of Environment | 10 |
| | Cecil Freeman, Commerce & Development | 10 |

* Note that the word "system" has two different meanings. As used in CARIS it means a hardware/software (H/S) configuration; as used in LIS 90 it has a much broader meaning, ie., it includes all aspects of all types of land-related data in the region.

5:00 Happy Hour

6:30 Dinner

Speaker: Honourable J.W. (Bud) Bird, Minister of Natural Resources. 11

## Friday, March 26

### IN KEDDY'S MOTOR INN

### Session IV

- Accomplishments, challenges, and problems in developing and maintaining production with computer-assisted mapping systems in 1982. Randy Trenholm, Chairman. 12

9:00 Glen Gibbons, Topographic Survey, DEMR, Ottawa. 12

Bruce Kloosterman, Land Resource Research Institute, Agriculture Canada, Ottawa. 13

Fred Kolls, IGM Services Ltd., Fredericton. 14

Joe Arbour, Canada Land Data Systems, Environment Canada, Halifax. 15

Rodolphe Lamarche, Universite de Moncton, Moncton. 15

10:30 Coffee/Tea

### Session V - Group Discussions

10:50 Syndicates will use the input from Sessions III and IV to establish objectives and priorities for the System* that should be in place by 1990. 16

NOTE: Students enrolled in Survey Systems, SE #602 in the Department of Surveying Engineering, attended all the sessions and formed syndicates concurrently with the registered participants.

12:15 Working lunch.

### Session VI - Plenary

1:15 The syndicates reported their findings for general discussion. 16

Robert Clarke, Student Group 16

Paul Burns, Student Group 17

Gilles Guerrette, Group A 17

Rejean Castonguay, Group B 17

Mike Pearson, Group C 17

Resolution 18

3:00 Adjourn. 18

Participants 18

Acknowledgement 19

## INVITATION TO PARTICIPANTS

You are invited to attend and participate in the discussions of LIS '90, No. 3. The purpose of this series of workshops is to develop a strategy for designing and implementing the Land Information System that should be in place in the Maritimes by 1990.

At previous L.I.S. '90 workshops there has been discussion on all, or nearly all, types of L.I. products. Last year, at L.I.S. 90, No. 2, a matrix for all L.I. products was discussed and the range of unit costs for several of the most relevant products was defined. This year, we propose to focus on the definition of a system or sub-system for renewable resources.

One session is designated for posing questions such as:

"How does one find the best land in the region for.................?

> "best" may mean best for growing some particular crop or it may mean best for some other purpose.
>
> "land" means surface of the earth, even if it is covered with water.
>
> "region" may be any one of the Maritime Provinces or a portion thereof.

Several speakers will report on their experience in developing and operating inter-active mapping systems and there will be syndicate and plenary discussions on the objectives and priorities for the system that should be in place by 1990.

A preliminary program is enclosed and a more detailed programme will be circulated about March 1st.

Sincerely,

A. C. Hamilton
Chairman

## LAND INFORMATION SYSTEMS '90 NO. 3

Thursday and Friday, 25 - 26 March, 1982

Fredericton, N. B.

| | |
|---|---|
| Sponsor: | The Department of Surveying Engineering, U.N.B. Fredericton. |
| Chairman: | Prof. Angus Hamilton, U.N.B. |
| Assoc. Chairmen: | Randy Trenholm, N. B. Dept. of Agriculture and Rural Development, and Franklin Cardy, Dept. of Environment. |
| Objective: | To develop a strategy for designing and implementing the type of land information system that should be in place in the Maritime Provinces by 1990. |
| Cost: | $45 registration for all participants. This includes lunch and dinner on Thursday, lunch on Friday and xeroxed proceedings. |
| Accommodation: | Participants to make their own arrangements; Keddy's are designating a block of rooms for Workshop participants. |
| Registration: | Those planning to attend are requested to write or phone to the Department of Surveying Engineering, U.N.B. (506-453-4700) prior to March 22. Registration is in Room E51, Head Hall, U.N.B. starting at 9:00 a.m. on Thursday, March 25. |
| Location: | Room E 51, Head Hall, (Engineering Bldg.) U.N.B. - Morning, March 25.<br>Keddy's Motor Inn - Afternoon, March 25 and all day, March 26. |

## SESSION I

### OPENING REMARKS

Angus Hamilton, U. N. B.

Prof. Hamilton welcomed everyone to the Workshop and introduced other members of the committee - Mr. Randy Trenholm and Mr. Franklin Cardy.

Prof. Hamilton talked briefly about the origin of these workshops, indicating that Mr. Willis Roberts was a prime force behind the accomplishments thus far.

Initially the concern was remote sensing (evolution/potential) and its use in mapping/monitoring renewable resources. This resulted in the Moncton Workshop (January 1979).

As to the definition of LI Systems in general, Prof. Hamilton cited FIG Commission 3 as the best definition of the term LIS:

> "A Land Information System (LIS) comprises the systematic compilation of all relevant data of a region with respect to soil and ground as basis for legal actions, administration and economy and as aids in planning and development for the maintenance and improvement of the standard of living."

### Recap of previous workshops

Randy Trenholm - N. B. Dept. of Agriculture

Any progress made from previous workshops was evident in the number of people from varying backgrounds who are present at LIS 90, No. 3.

Although the first workshop dealt with the renewable resources of forestry/agriculture it OPENED UP A ROUTE OF COMMUNICATION TO R/D information & information systems.

Any workshop that is too technical defeats its purpose. Also if the human element is downplayed or eliminated the LIS system falls apart.

He reviewed briefly the key purposes of previous LIS 90 workshops.

## SESSION II

### CARIS (Computer-Aided Resource Information System)

Dr. S.E. Masry - U.N.B.

Dr. Masry outlined the CARIS system as follows:

Hardware: (1) Digital Equipment Corporation (D.E.C.) Computer of the PDP 11 type;
(2) Tektronix-graphical (high resolution) C.R.T.'s;
(3) Table digitizers;
(4) Drum plotters;
(5) Mainly off-the-shelf interfaces.

Software: Integration of modules from:
(1) Canadian Hydrographic Service;
(2) Canadian Geographic Information System;
(3) University of New Brunswick;
(4) Land Registration and Information Service;
(5) Digital Equipment Corporation.

The present status of CARIS is the result of approximately 25 - 30 man-years of effort.

CARIS is designed to handle two distinct operations:

Data Collection:

(1) stereo models - analytical/analogue
(2) orthophoto maps - themes in polygonal form
(3) line maps - topographic
(4) attribute files - documentation

Information Retrieval:

(1) graphical display - graphical C.R.T.'s & plotter
(2) attribute files - documentation, polygons and themes.

Dr. Masry concluded by listing the characteristics of CARIS:

1) Developed for and evolved from mapping applications
2) Designed to mix and handle efficiently both cartographic features (roads, contours) and polygons (soil types, forest stands, etc) efficienly;
3) Designed to allow retrieval of large graphical files i.e., up to 500 pts/line-inch of map.

## Mr. Y. C. Lee - Systems Analyst - U. N. B.

Mr. Lee dealt mainly with the graphical (i.e. topological and geometriical) information retrieval with respect to the Caris theme, such a theme being one single map:

1) The graphic information must be digitized;
2) Geometrical information includes:
   a) points (coordinates)
   b) lines (length)
   c) polygon (areas);
3) Topological information relates all the geometrical entities and includes:
   a) neighbourhood - what are the two parcels to the left and right of a boundary?
   b) enclosure - is any specific parcel entirely within another parcel?
   c) incidence - which boundaries branch out from any specific point (node)?
4) The basic storage units of the attribute information are:
   a) boundaries
   b) parcels
   c) topographic features

Mr. Lee gave examples of various questions that could be asked of the system:

1) length/area of a boundary/parcel?
2) which lines are boundaries (topological)?
3) which lines are not boundaries (topographic)?
4) boundaries of parcel No. 1051?
5) common boundarie(s) between 2 parcels?
6) neighbours of a particular parcel?
7) is the parcel enclosed by another parcel?

Mr. Lee concluded by stating that the connection between the cartographic software and the attribute files is the polygon label, it is used to identify both the polygon and attribute files.

## Prof. John Dedourek - U.N.B.

Prof. Dedourek stressed that the attribute system records non-graphical information (e.g. owner, soil type, tree characteristics) and may be geometric or topological. The software is available to process such alphanumeric information.

An example of this information using a typical NB forest stand map sheet includes:

a) stand number
b) up to 3 species with a species code and percent
c) height class
d) development stage
e) area (geometric?)

Example retrieval questions include:

a) Find within sheet 7 all polygons with area greater than 10 hectares;
b) Find within Sheet 7 all polygons with areas between 5 and 10 hectares.
c) Find within Sheet 7 all polygons with areas between 5 and 10hectares and list more with species SP (Spruce). Print all

A tour of THE DIGITAL MAPING LAB and a demonstration of CARIS followed.

## Session III

Chairman - Franklin Cardy - N.B. Dept. of Environment

"What will be expected of the LIS in 1990?"

### Forest Management

Speakers

David Curtis - N.B. Federation of Wood Producers

Mr. Curtis began by describing, and outlining the purpose of the N.B. Federation of Woodlot Owners Inc. The Federation is made up of 35,000 woodlot owners, who collectively own 1/3 of the forested land in N.B. The average woodlot is 100 acres and the new Crown Land and Forest Act has designated woodlots as the primary source of supply of wood in New Brunswick.

Mr. Curtis indicated that the technology that will be applied to woodlots in the future will be technology which is suitable for small scale operations. As Mr. Curtis enumerated, the following information needs to be supplied individually to woodlot owners: land forms, drainage, slope and climatology. This type of information would be appropriate to a site specific approach to forestry.

Thom Erdle - N.B. Dept. of Natural Resources

Mr. Erdle described information requirements against the background of an anticipated wood shortage in New Brunswick within the next 20-40 years. The new Crown Lands and Forest Act places the requirement for more planning and analyses upon the Forest Mangement group. A system such as CARIS would permit more time to be spent in analysis and less time in getting the information together.

Mr. Erdle emphasized that the information contained in a LIS must reflect the condition and structure of the forest and must allow for change in that information. Its spatial resolution must be suitable for a variety of purposes. As an example of the type of questions that could be asked of a LIS, Mr. Erdle chose the spruce budworm problem. In particular, what areas have characteristics which make them susceptible to budworm infestation, how are these areas clustered and related to inhabited regions, and how will their (forest) volume be affected if left unprotected?

Eric Wang - Fraser Inc. Edmundston

Mr. Wang discussed the new requirements that the Crown Lands and Forest Act places upon the forest industry. The legislation institutes a new management system for the province. Each forest company must institute a management plan by 1982, and by 1987 companies must supply the first update of the 1982 plan.

The first plan will not be affected by any LIS, however, an LIS could provide information for the 1987 update. It would assist in keeping the data base current, if the data base is annually updated to reflect forest industry activities. Mr. Wang concluded by expressing his hope that there would be a standardization of information between government and industry.

## AGRICULTURE

### Speakers

John McMillan - N.B. Dept. of Agriculture

With improvements in farming methods and technology, the Dept. of Agriculture must keep up with these developments by providing more precise information about agricultural land. At present much of the required information is not available.

It is expected that an LIS System will provide information about soils, climate, and major farming areas on a provincial scale. This information should also be available on a regional scale, such that questions of the following nature could be answered: what is the potential for grain production in the southern regions of New Brunswick? An LIS System should also be able to supply information to an individual as to where he can obtain suitable land for activities, such as sheep farming or Christmas tree farming. Information concerning land values should also be available.

Mr. McMillan drew the conclusion that information is required on the provincial, regional and local scales. This information should include forest cover, soil, climate, zoning, land value, susceptibility to erosion, and water availability (rainfall, storage and evapo-transpiration) data.

Tom Demma - N.B. Federation of Agriculture

Mr. Demma stressed that the provision and analysis of land data is of key importance to agriculture and expressed the following as concerns:

1) Although land data is a government responsibility, is it available to individuals or groups now?
2) Are planners willing to ask for input from non-government agencies in the short run?
3) How can we have access to and influence the policy makers?
4) If there are requests (non government) for data access then should the government comply?

Leo Dionne - Dept. of Biology - U.N.B.

With the object of meeting New Brunswick's acute need for a high protein legume, work has been underway at U.N.B. to adapt a native plant to fill this need. It would be somewhat premature to announce that the crop is now ready, but Mr. Dionne felt that the work has been sufficiently encouraging to warrant asking how much land would be suitable for the crop in this province.

The original intention was to develop the species primarily as a rotation crop for potatoes. This still appears to be its most promising potential use. However, if it turns out to have the commercial value which we believe it may well have, its culture in areas other than those noted for potatoes could also be considerable. In addition to good potato land, the species should also do well on any land suitable for grain and especially those which can grow good clover. We are therefore asking if the "Land Information System" would be capable of giving us some ball park figure as to how much land of the type indicated could be potentially available for growing such a crop?

## LAND MANAGEMENT

### Speakers

Tom Sifton - Lands Branch, D.N.R.

The role of the Lands Branch is twofold:

1. identification of land owned by the Crown
2. management of Crown Lands.

With respect to the first of these, it is expected that the LI System will be able to provide a parcel identifier for Crown Lands and privately owned land as well as information concerning the description of the land and the restrictions upon the ownership.

Management of Crown land information should be provided by the system, in order to provide potential siting information for such land uses as recreation. It is also expected that the system would be able to answer questions concerning agricultural and forestry land use. This information should be available on demand and be accurate enough to meet the users' requirements. It was suggested that the information be in layer form (overlays) with colour schemes.

Arnold Boer - Wildlife Section, D.N.R.

It is expected that the LI System be able to answer questions regarding the location of forest, fields, clearings and wetlands. If the system is given the requirements for a certain habitat area of a wildlife species, it should be able to supply information as to the locations of such areas etc. Example of questions to be answered are:

1) Where are the white tailed deer wintering areas?
2) Where are the cutovers of age classes: zero to five years?
   five to fifteen years?
   etc.
3) What is the stage of development of the old fields?
4) What is the size and location of the wetlands?
5) Where are the salt licks and mineral springs?

Paul Monti - Dept. of Environment

The function of the Dept. of Environment is to deal with such things as air, water and land pollution. The land information requirements necessary for this can be divided into three classes:

1. Biophysical Inventory: The required components are soil type, geology, flood data, land use, vegetation etc. This information is used to determine waste disposal sites etc. and for resource evaluation.

2. Land Use: Information concerning types of agriculture, water-shed analysis, crop production, environmental stress areas, and proposed land uses is required.

3. Land Capability: Concern is given here to making the best use of a particular piece of land. Land use, forest, recreation, fish and urban and residential maps are necessary.

It is expected that the L.I. System should be able to supply information on each of the components of the three classes discussed above.

Mal Redmond - Fisheries Section, D.N.R., Fish and Wildlife Branch

The Fisheries Section is concerned with land use adjacent to waters. This information should include all relevant data and be quickly retrievable. The data location should be available, along with any information concerning the stream (or lake), such as velocity, temperatuure, volume of flow, etc. The particular data requirements are physical, chemical, biological, hydrological and any combination of these.

Gerry Ward - Dept. of Civil Eng., U.N.B.

Proposed questions for LIS 1990:

1) Where are the best sites of 1000 ha for a nuclear power plant? (the top five)?

2) Where are the two best sites of 10 ha each for hazardous waste disposal in the Maritimes?

3) Where are the 100 best sites of 100 ha each for municipal land fill sites in the Maritimes?

4) What is the best route for any linear transmission project, such as a pipeline, powerline, highway, etc.?

Mr. Ward focused on contentious activities which require careful environmental studies with specific data needs, and a justification for pursuing costly long term plans.

In particular he looked at hazardous waste site selection although this has common denominators with other selection processes.

In 1978 an Environment Canada Committee did a study on waste site selection. Its terms of reference included:

a) onwership
b) chose a site outside water bodies or watersheds
c) site size of 100 ha not including a buffer zone
d) natural clay of 5 m. depth and no bedrock
e) area near non-urban growth area (present or future)
f) identify the ecology as to species, variety, and diversity
g) near present waste sources

The corresponding three phases of site selection included:

a) use of information to determine all possible candidate sites
b) on site preliminary excavation i.e. subsurface soil
c) geological and hydrological studies at final site.

This process was an example of Manual Constraint Mapping which can be used for overall analysis i.e. candidate site selection or impact assessment. Larger scale maps should be used for specific evaluation.

Problems in an Environmental LIS:

a) scattered information
b) leg work and eyeballing
c) seasonal data variation (time windows)
d) event probability (natural hazards)

Therefore a sensitivity analysis system would have been good for this study.

## ECONOMIC DEVELOPMENT

**Speakers**

Darwin Curtis - Energy secretariat, Dept. of Finance

There is energy involved in just about all processes that take place, therefore information requirements are vast in this field.

Presently, of greatest importance concerning land information requirements is the development of renewable energy sources. Attached are some examples.

Much of the information required for these developments is not available and it is expected that the L1 System 1990 will be able to improve on this situation. Once this information is available in an accurate usable form it will be able to be used in increasing the social-economic well being of society.

### New Brunswick Energy Secretariat

### Land Information Requirements for Renewable Energy Development

### Outline

1. Wood - identification of quantities and qualities of fuel wood following good forest management guidelines.
2. Peat - available qualities and quantities of fuel peat.
3. Solar - radiation data at various angles and directions (this information is very limited at present).
4. Geothermal- available quantities of ground water with temperatures, depths and qualities.
5. Wind - wind speeds, duration, and prevailing direction.
6. Hydro - flows and heads of undeveloped river sites.
   - tidal flows, frequencies, and height.

Gordon Smith - N.B. Dept. of Tourism

The Department of Tourism is concerned with the use of land for recreation purposes. The major goals of the Department are:

1. maximize the economic benefits of the tourist industry
2. enhance and assist the natural heritage in New Brunswick
3. provide recreation facilities.

To meet these goals it is necessary to analyze the existing land uses and from this determine the best locations for recreation and tourism ventures. There must also be a way to present this information so that the maximum benefit can be made of the facilities.

It is expected that the LI System 1990 will be able to meet these requirements in both digital and cartographic forms.

Nabil Elhadi - Food Risk Mapping, N.B. Dept.of Environment.

Flood risk mapping requires the use of both hydraulic and hydrological studies and requires the following information:

a) topography and base maps
b) channel characteristics
c) water control structures
d) percentage forest cover
e) storage (lakes and swamps)
f) soil types
g) existing developments
h) types of land use
i) flood delineation, and
j) historical flow data.

Mr. Elhadi raised questions as to what information would be suitable for an L.I.S., what the cost would be, and whether the information should be available in one data bank?

Cecil Freeman - Commerce and Development

There are two different perspectives to industrial land:

(1) Government related activities
(2) Industrial activities or industrial clients.

Industrial parks and cities are places on which a wide range of economic activities occur and it is therefore difficult to select the best size without considering a great many variables. Since decisions of firms in the private sector tend to be unique, Mr. Freeman's discussion centred on government and publicly owned parks and sites. The study of the factors which play a part in the location of these sites is known as location analysis and the land factor constitutes 5% or less of the input. Other factors are mainly economic, including development objectives that promote decentralized opportunities.

An industrial park may be viewed as an organized industrial district with a comprehensive plan which is designed to ensure compatibility between the industrial operations therein and the existing activities and character of the community in which the park is located. The key is to protect areas surrounding it from being devoted to lower uses.

The question to be answered is: where would one find land for specific sites, taking into account size and shape, ownership, type of industry, physical condition, topography, soil and subsoil, land costs, availability of utilities and fresh water?

## KEYNOTE ADDRESS

### The Hon. J.W. (Bud) Bird, Minister of Natural Resources

Mr. Chairman, Ladies and Gentlemen:

I want to express my pleasure and my appreciation at being invited to talk to you as you hold this workshop on Land Information Systems for the 90's.

I know that your objective at this third gathering you have held is to develop a strategy for designing and implementing the type of Land Information System that should be in place in the province by 1990. I applaud this objective and want to assure you that in this age of dazzling technology we live in, accurate and up-to-date information has to be almost instantly available in order to make the best predictions in this changing world around us.

In my position as Minister of Natural Resources this need for information is very evident particularly in light of the challenges of developing the renewable resources of the province, so as to meet the needs of today and to ensure that there will be sufficient resources for the needs of tomorrow. The new Crown Lands and Forests Act which comes into full force in less than a week has been written with this in mind. The Crown Lands of the province have to be managed. We can no longer expect nature to do it all for us.

Those of you involved in the management of resources, both renewable and non-renewable, are aware that not only must we look to the social and economic demands of today's society, but also toward meeting the demands of future generations.

Striking a balance between today's resource consumption and tomorrow's needs is a difficult task. We must consciously recognize the obligations embodied in what Aldo Leopold, one of the earlier North American conservationists and resource managers, referred to as "Land Ethic". His holistic view of all aspects of land and the relationshps among those aspects led Leopold to see a use of the land and the land based resources beyond the purely economic. He stressed that we must think in terms of cogs and wheels in order to truly understand the land and its capabilities.

In recent years, managers have recognized the need for an analytic approach in understanding the interactions and products of natural systems. Resource data are collected and simulation models developed to provide a framework for sounder resource decision making. The reliability of those models depends on a detailed inventory of our resources as well as an understanding of the social and economic needs for those resources. For example, a recently completed field inventory and analysis of our peat bogs will provide information on the type, quality and quantity of the resource and will be a valuable tool in planning the use of the peat resources to meet local and world-wide demand.

The requirement for a detailed inventory does not stop with listing and classifying the natural products. Long term management requires an inventory of the capabilities of natural systems and information on trends in world demands for particular resources. A projected strong world demand for a particular wood species will require the resource manager to gear up for optimum production of that species, which in turn requires choice of the right site. By matching the capabilities of land available for production with the requirements for establishment and growth of the species, the most suitable land can be determined for the project.

A goal of this Department, under the auspices of the Crown Lands and Forests Act, is a Land Classification System, which will classify the suitability of Crown Lands for various uses based on the biophysical capabilities of the land and the social and economic demands of society. In essence, the Crown Lands and the resources found there will be managed on an integrated basis in the best economic and social interest of the citizens of New Brunswick.

The success of any classification is determined by the quality and quantity of the data. An ideal Land Information System will be one that is developed by both the user and producer of resource data so that a uniform system is adopted having a common base appropriate to all users. A central data bank for collection and analysis of data would appear to be the first step.

At present, government agencies often collect resource data independently of each other, resulting in duplication of effort and difficulty in gathering existing data together. In addition to addressing these problems, this Central Collection Agency could have the responsibility of pin-pointing data gaps and recommend expenditures of money to collect this data.

As we move into an era of intensive resource management involving complex decision making, the need for accurate and current resource data is essential.

While resource data is a vital component, the success of management will lie with the skills of the manager and his ability to decide upon courses of action and strategies to meet today's demand while still providing for future generations. His skill and knowledge will be the testing pont. With accurate and reliable resource data, we have what Leopold referred to as "cogs and wheels". But to build these cogs and wheels into a well oiled and reliable machine requires the skill of the craftsman.

LIS'90 is asking its participants to pose questions that they consider relevant to 1990. I would like to pose two questions to you trusting that they will be in the back of your minds as you work in your synideates tomorrow.

One: Can we define with assurance what information has to be collected, can be stored efficiently and economically, can be analyzed and eventually help decision makers choose the best of several options?

Two: Should the emphasis be on the quality of information rather than quantity or the other way around.

Thank you.

## SESSION IV

"Accomplishments, challenges and problems in developing and maintaining production with computer-assisted mapping systems in 1982".

Speakers

Glen Gibbons - Topographic Surveys, DEMR, Ottawa.

Digital Mapping by the Topographic Division includes the following:

a) data acquisition
b) a 3-dimensional data base
c) cartographic editing
d) reproduction.

This presentation will deal with data acquisition, and some of the philosophies, procedures and techniques.

The effort in digital mapping was begun about 20 years ago. Storage and retrieval at that time was soly on magnetic tape. Processing required sequential access of the data to drive the plotter. The actual ink-to-paper process required a considerable length of time. The initial thrust involved data acquistion from existing map sheets by manual digitization, that is, by means of a cursor and digitizing table.

During this period, a means of collecting the data by photogrammetric means was developed. Encoders were attached to the Wild plotters, while retaining the table output as a means of checking.

Both of the above involved "blind" digitizing, with the data being stored, but with no immediate representation of the work, or feedback, in front of the operator. It also required reprocessing to attach cartographic attributes and to edit.

This led to the definition of a new project complete with interactive graphics and an integrated flow of data based largely on the photogrammetric approach. The data itself was organized into position files and given "intelligence", or flags denoting the means of acquisition (e.g. surveyed data vs. manually digitized). The data would be edited for cartographic errors and filed on tape.

For a variety of reasons, the decision was made to buy, rather than build, the requisite system, and a turnkey system based on the DEC PDP 11/45 was subsequently purchased from M & S.

This integration with M & S allowed the provision of graphic screens at each workstation, so that work could be viewed as it progressed.

A number of lessons emerged after these exercises:

a) the need for quality control, particularly by the stereo operator at his work station;
b) the need for the tools for this quality control;
c) the requirement for input of cartographic coding at the time of data acquisition;
d) the need for a conceptual shift by the operator, from conventional mapping to digitization.

A number of modifications to the system addressed these needs. A function key pad (or a menu or a keyboard) was added to the workstation to allow input of cartographic codes. This coding system became the heart of the quality control, as well as providing statistics regarding quantities of data. Finally, the video digitizer was replaced by a microprocessor.

The existing procedures, based on these developments, are as follows: photos are mounted in the plotter and the operator performs relative orientation and levelling by traditional means. The parameters for absolute orientation are derived and down-loaded into the microprocessor. The model is scanned, with each feature being identified as it is digitized by means of its appropriate code on the menu or keypad. The code dictates whether digitization is via stream or point mode. Actual input of data is controlled by a footswitch on the plotter. The data entered is filed in levels, also dictated by the attribute code. Editing of the data at the workstation is limited to modify and delete to ensure the integrity of the data base.

Formal inspection of the data is performed on a 1:35,000 plot produced from the digitization. Field and visual checks for accuracy and neatness reveal needs for resets. A fully inspected block becomes the topographic base.

A fundamental aim of the program is to produce digital maps that are essentially indistinguishable from conventionally produced sheets. For this reason, a logo was developed to denote a digitally produced map. This logo appears in the upper right corner.

To date, some 65,000 square kilometers have been mapped by this method. With the developments and procedures outlined above, future mapping will proceed at a greater pace.

Bruce Kloosterman - Land Resource Research Institute, Department of Agriculture, Ottawa

A. This research institute has developed the Canadian Soil Information System (CanSIS). The mandate given to the system involved the following functions:

   a) system development
   b) input of data into the system
   c) system management
   d) archive information stored in the system
   e) retrieval of information in the system.

   This system grew from recommendations made in 1970 to utilize EDP to capture, store, output information on soil.

B. The components of the system are as follows:

   a) organizational procedures
   b) hardware
   c) software
   d) people.

   Two major subsystems are the data management, consisting of data files, soil name files, daily files, performance/management files, land potential files and others, and the cartographic file which contains stored digitized maps.

C. The products available from the system are as follows:

   a) soil descriptions (output of data input)
   b) data summarization (subsets of soil description, overview of what data is about)

c) statistical analyses on obtained data
d) derivative maps (e.g. slope and drainage maps)
e) interpretative maps (geared to specific use aspects)
f) tabular information (gives statistics including averages and number of polygons)
g) spatial display (spot locations of information).

D. The following is a list of the restrictions on the CanSIS System:

a) coverage by project
   - usually we don't have total coverage for all of Canada
b) various scales
   - scales vary depending on the requirements of individual surveys
c) map sheet basis
   - one is restricted to view information on a map sheet by map sheet basis
   - total map independence.

E. The following is a list of the major issues presently of concern to us involved in CanSIS:

a) data integration
   - the bringing together of map files with non map data
b) data exchange
   - transfer of data between geo-information systems
c) data availability
   - make data more readily accessible to the user through interactive procedures.

Fred Kolls - IGM Services Ltd., Fredericton

Mr. Kolls represented IGM Services Ltd., which provides data bases of earth science data for resource managers and planners. The product is a graphic information system depicting earth science data.

The system design is such that it provides much of the same options of a computer hosted information system BUT is designed for information users who do not have access to computers capable of processing land related information or do not pass through the data bases frequently enough to justify a computer system. Nevertheless the system tries to emulate a computer system in that:

1. Each layer of the graphic system represents a logical data set and only one data set. There is no duplication of information.
2. All the information is presented at one scale. The scale is the user's choice.
3. The data sources used are those of the user or those that are in the public archives.
4. The data is edited to reflect one data set per layer. Scale changes are typically done with a copy camera.
5. The data is registered, i.e. each layer fits in its proper geographic location.
6. The final product is in color and can be reproduced with conventional diazo techniques with standard diazo materials.

This allows the user to:

1. Combine various data sets at will, i.e. the system is user definable and he dictates map content.
2. Make paper or film copies of any combination of data sets that he desires.
3. Update the map base easily and quickly.
4. Use existing staff for maintaining the graphic information system without the need of additional equipment or retraining.
5. AND if the user is heading towards a computer hosted information system, it allows him to organize and edit his data before digitizing. This reduces considerably the amount of editing he will have to do.

IGM's System is NOT designed to replace or compete with computerized information systems. It is designed as an interim step or as an improvement to existing graphic systems for those who do not access their data bases more than 10 times a year.

The cost to produuce a package of this type is roughly 3% to 5% of the cost of acquiring the data in the first place. The question we must ask ourselves is "How many times do I have to process through a data base within a certain time frame in order to justify building a computerized information system". My conservative estimate is that we have to pass through at least ten times a year. I leave that open to debate.

Joe Arbour - Dept. of Environment, Ottawa

Presently there is an overload of maps and we are not able to analyze them or store them. A good cartographic system will make it easier to work with the various maps and also provide a means to analyze the information on the maps. CGIS is involved in the set up of the Canadian Land Data System which has the following characteristics:

1. software and hardware
2. data base construction
3. expertise.

The role of CGIS in the development of Canadian Land Data Systems is threefold:

1. to develope a means for the input of data
2. to determine what is to be done with the data when it is entered
3. to decide on the most efficient means to retrieve the desired information.

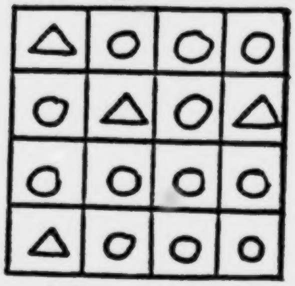
The input of the data can be undertaken in either the polygon or point mode determined by the scale and nature of the job. The data is classified (e.g. forest information) according to its nature. Two other means of input consist of punching and automated scanner systems.

The analysis of the data involves spatial calculating map linkage, overlay process, subset detection, etc. In each case, it can be seen that large amounts of data must be organized. This is especially so on a nationwide scale. The organization of this data is very costly and thus its benefits must be justified.

Rudy LaMarche - Univ. Moncton

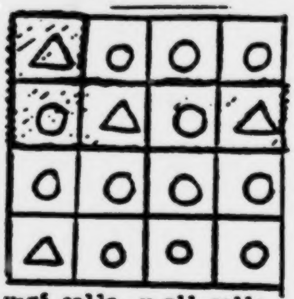
### Entropy and Land Use Analysis

Information theory can be used in the analysis of agricultural and forestly land-use patterns. This theory is based on the concept of entropy referred to in this context as uncertainty or freedom of choice.



$N=16$, $n_1=12$, $n_2=4$

Figure 1



$w_1=5$ cells, $w_2=11$ cells

Figure 2

The concept can be illustrated in the following way. In Figure 1 assume that there are no constraints present in the arrangement of the given symbols in the 16 cells. If N is the number of cells, $n_1$ the number of circular symbols and $n_2$ the number of triangular symbols, the number of possible combinations W is given by:

$$W = \frac{N!}{n_1!} = \frac{16}{12!4!} = 1820$$

The entropy of the system is given by $H = \frac{1}{16} \log w = 0.47$

For Figure 2 the wavy line represents a barrier over which the two resulting systems cannot move. In this case

$$W = W_1 \times W_2$$

$$= \frac{5!}{2!3!} \times \frac{11!}{10!1!} = 110$$

$$HC = \frac{1}{16} \log 110 = 0.29$$

The entropy or freedom is less for Figure 2 to the extent of 0.18 and this difference is a measure of the loss of freedom resulting from the introduction of a constraint.

If the delineated areas were equated to sites, and there were numerous constraints, evaluating each in turn for each given subset of sites would indicate the hierarchy of factors determining land-use patterns in the study area. By extending this process in practice it is possible to go from an overwhelming mass of original data, which is often confusing, to a large number of well-defined subsets and finally to a smaller number of well-defined categories.

Applying this concept to land-use analysis has the following advantages:

1) The data required is usually available or may be easily obtained.
2) The model has very few underlying assumptions.
3) The model leads to the identification of individual sites and the hierarchy of factors determining their land use.
4) It prevents the researcher from formulating conclusions which go beyond that which the data will support.

Mr. Franklin Cardy ended the session by posing a question of the morning's participants with respect to the system that they described having the capability to answer some of the problems brought up in the previous days sessions. The main concern was how to fill the gap between the NATIONAL and LOCAL systems currently in use. The distinction between data acquisition and analysis was also discussed.

## SESSION V

### Group Discussions

Mr. Angus Hamilton asked the workshop participants to divide into various working groups to establish objectives and priorities of a LIS 1990. Specifically the following questions were to be looked at and the probable answers given:

1) What do we need in a system?
2) What is a reasonable system?
3) Do you need your own system for the answers?
4) Is there a need for an effective mechanism to activate this system?

## SESSION VI

Mr. Randy Trenholm opened the session by asking the chairmen of Session V, for their groups' answers to the above posed questions.

### Robert Clarke - Student Group

The group recommended a decentralized system where each department/industry would service its own needs but have MANDATORY interchangeability of information. Questions of a LIS should not expect decisions from a computer since decisions are made by humans and based on information going in/coming from the computer.

Recording all necessary information or statistical weighting of such is not practical by 1990 but the computer as an information retrieval/storage unit is necessary.

To answer any questions of the system, what has been historically and is presently being asked, will be the questions that will need answering in 1990.

EDUCATION and COMMUNICATION are the keys to the compatibility of a LIS.

Paul Burns - Student Group

The group felt that a LIS needed:

a) a management system - government/public input
   - choose project priority
   - find/analyze the data.
b) central index to locate information and allow-individual data banks.

A LIS 90 should look at: standardized data, spatial relationships, public data input, and current land use.

Could we as professionals live with a LIS if it affected our jobs?

Gilles Guerette - Chairman

A LIS 90 should concern the following:

a) Identification of common user needs and realization that these needs can't exist in an isolated fashion.
b) There is a big gap between the hardware/software of information systems and users of the information. This gap can be filled by:
   - identify how existing data could be used through a systematic functional search.
   - standardization of information use.

Information is a tool which can bring about development and change through a harmonic and systematic approach.

Other standardized items include: computer language, maps, and attributes.

Rejean Castonguay - Chairman

The group looked at the mechanism needed to address the LI needs and the priorities of such needs. To tackle this problem, leadership is needed from the LI manager and the surveying profession. There should also be standardization and information identification as to "what" and "where".

The resulting entity will be called a Land Information Management Bureau (LIMB). Its role would be one of coordination and standardization of information, but it would not implement programs. LIMB would be created by a Provincial Task Force. Such a creation would result in an awareness at the Secretariat level and provide an opportunity to present briefs on a LIS. The problem of implementation could be overcome by statutory power given to LIMB.

Mike Pearson - Chairman

A LIS is necessary for public use with respect to power, transportation, health, etc. Such a system should include:

a) internal/external information bases
b) decentralization with accessability
c) parcel or geobased foundation
d) information sharing ability (not scale/but resolution dependent).

What is needed in 1990 is a LIS that has an atmosphere of co-operation and compatibility. The means by which each department can meet this atmosphere must be defined. Data compilation must be in usable format for 1990. Current software must be interchangeable.

## CONCLUSION

Mr. Randy Trenholm fielded questions from the participants as to what were the key concerns of a LIS or LIMB program. After a lengthy discussion, a resolution was passed as follows:

"IT IS PROPOSED THAT THIS GROUP MANDATE THE CHAIRMAN OF LIS 90 NO. 3, ON BEHALF OF THIS CONFERENCE, TO REQUEST THE PREMIER OF NEW BRUNSWICK THAT A TASK FORCE BE ASSIGNED UNDER THE CABINET SECRETARIAT OF THE PROVINCE OF NEW BRUNSWICK TO EXAMINE THE DIRECTION IN WHICH THE PROVINCE SHOULD GO WITH RESPECT TO LAND INFORMATION AND A LAND INFORMATION SYSTEM."

Mr. Franklin Cardy acknowledged that there is a gap in present systems and that standardization and coordination are the keys to filling this gap. He also stated that Mr. A. Hamilton has done an excellent job with respect to the UNB students and that we need them.

Mr. Angus Hamilton accepted the charge to deliver the resolution to the Premier. He also thanked the participants, the students and his Co-Chairmen Messrs. Franklin Cardy and Randy Trenholm. LIS 90 No. 3 then officially ended.

### Participants L.I.S. 90 - No. 3

| | |
|---|---|
| Allen, Clair - Dept. of Natural Resources | |
| Arbour, Joe - Environment Canada, Halifax | 15 |
| Avey, Ted - Atlantic Air Survey, Halifax | |
| Boer, Arnold - Dept. of Natural Resources (Wildlife Section) | 8 |
| Cardy, Franklin - Dept. of Environment | 6 |
| Carroll, Don - Dept. of Natural Resources | |
| Castonguay, Rejean - L.R.I.S., (Planning Div.) | 17 |
| Curtis, Darwin - Dept. of Finance (Energy Secretariat) | 9 |
| Curtis, Dave - N.B. Wood Producers | 6 |
| Dedourek, John - School of Computer Science, UNB | 5 |
| Demma, Tom - N.B. Federation of Agriculture | 7 |
| Dickson, Plen - Dept. of Municipal Affairs (Assessment Branch) | |
| Dillon, Mike - Dept. of Agriculture and Rural Development | |
| Dionne, Leo - Dept. of Biology, UNB | 7 |
| Elhadi, Nabil - Dept. of Environment, Flood Risk Mapping | |
| Erdle, Thom - Dept. of Natural Resources | 6 |
| Fay, Bradley - N.R.M.S., Amherst | |
| Freeman, Cecil - Dept. of Commerce & Development | 10 |
| Gauvin, Michel - Dept. of Municipal Affairs | |
| Gibbons, Glen - Dept. of Energy, Mines & Resources (Surveys and Mapping Br.), Ottawa | 12 |
| Gill, Gary - Dept. of Natural Resources | |
| Griffin, Bill - Dept. of Natural Resources | |
| Guerette, Gilles - Restigouche Planning Commission, Campbellton | 17 |
| Hamilton, Angus - Dept. of Surveying Engineering, UNB | 4 |
| Kearney, Tom - Dept. of Tourism | |
| Kincaid, Len - Atlantic Air Survey, Halifax | |
| Kloosterman, Bruce - Agriculture Canada (Land Resource Research Institute), Ottawa | 13 |
| Kolls, Fred - IGM Services Ltd., Fredericton | 14 |
| Lamarche, Rodolphe - Universite de Moncton (Dept. of Geography) | 15 |
| Lee, Y.C. - Dept. of Surveying Engineering, UNB | 5 |
| Lemarchands, Eric - Agriculture Canada | |
| MacKay, Graham - L.R.I.S. Summerside | |
| Mason, Doug - Dept. of Natural Resources | |
| Masry, Salem - Dept. of Surveying Engineering, UNB | 4 |
| McMillan, John - Dept. of Agriculture & Rural Development | 7 |
| Monti, Paul - Dept. of Environment | 8 |
| Moore, Byron - Dept. of Municipal Affairs (Assessment Branch) | |
| Murray, Doug - P.E.I. Dept. of Highways, Charlottetown | |
| Norgren, Roger - L.R.I.S., Summerside | |
| Pearson, Mike - L.R.I.S., Summerside | 17 |
| Peters, Boyd - N.B. Dept. of Agriculture and Rural Development | |
| Poirier, Mark - N.S. Dept. of Municipal Affairs, Truro | |
| Redmond, Mel - Dept. of Natural Resources (Fisheries Section) | 8 |
| Rees, Herb - Agriculture Canada | |
| Sifton, Tom - Dept. of Natural Resources (Crown Lands Branch) | 7 |

Smith, Ed - A.D.I. Ltd., Fredericton
Trenholm, Randall - Dept. of Agriculture and Rural Development (Agricultural Land Planning) 4
Wang, Eric - Fraser Inc., Edmundston 6
Ward, Gerry - Dept. of Civil Engineering, UNB 8
Young, Robert - Dept. of Natural Resources

## ACKNOWLEDGEMENT

Sue Nicholls, Lawrence Eeckhout, Bernard Gunning, Vernon Oliver, Femi Falade and Adamo Babalola - graduate students in SE 6512, Land Information Systems II, participated in the planning and preparation for the Workshop and compiled and edited these proceedings. Mr. See Hean Quek, Graduate Teaching Assistant for SE 4602 assisted with the arrangements and facilities for the Workshop. These contributions are gratefully acknowledged.

# APPENDIX M

Appendix M

# LAND PRODUCE, PRODUCTS AND POSSIBILITIES

These documents address the potential for more productive use of our land and ways it is being and may be achieved.

Page

1. Forestry M 1
    - Relative Benefits from Alternative end uses of wood.
    - Primary Production 1960 to 1981.
    - Primary Production by ownership 1977 to 1981.
    - Softwood Pulp Prices 1975 to 1982
    - Small woodlot utilization project, volume harvested.
    - A Properly Managed 100 Acres can Produce Each Year.
    - Forest Production Comparisons N.B., Sweden, N.S., and Canada.
2. Silviculture, etc. M20
    - Reforestation in N.B. Creates Jobs.
    - Intensive Forest Management.
3. Agriculture M28
    - Comparative Crop Values (Pulp to Vegetables).
    - Billion Dollar Challenge.
4. Other M35
    - Fish and Wildlife Resource Values.
    - Productive Possibilities.
    - Isolated Small Crown Land Parcels.
    - Crown Reserve Waterfront Properties.
    - Maple Sugar Opportunity.
    - Model Christmas Tree Farm.
    - Indicative Land Use Plan 1972 (Map).
5. P.L.I.P. Productive Land Identification Program. M50

## RELATIVE BENEFITS FROM
## ALTERNATIVE END USES OF
## NEW BRUNSWICK WOOD RESOURCES

By Statistics Canada's interpretation, "value added" in essence includes the following:

- Wages & salaries
- Selling and administrative costs
- Capital cost allowance
- Profit

Value added (as above) is an accepted general measure of the relative economic impact of various industrial activities.

Difficulties arise in employing "value added" in comparing relative benefits to the Province from alternative uses of its available wood resources. Published statistics are general to the extent that they do not permit with reasonable confidence the estimation of value added for a number of specific alternative end products or multiple end products. Further, value added could be questioned as an equitable base for comparing net benefits to the Province of alternative wood uses, vis:

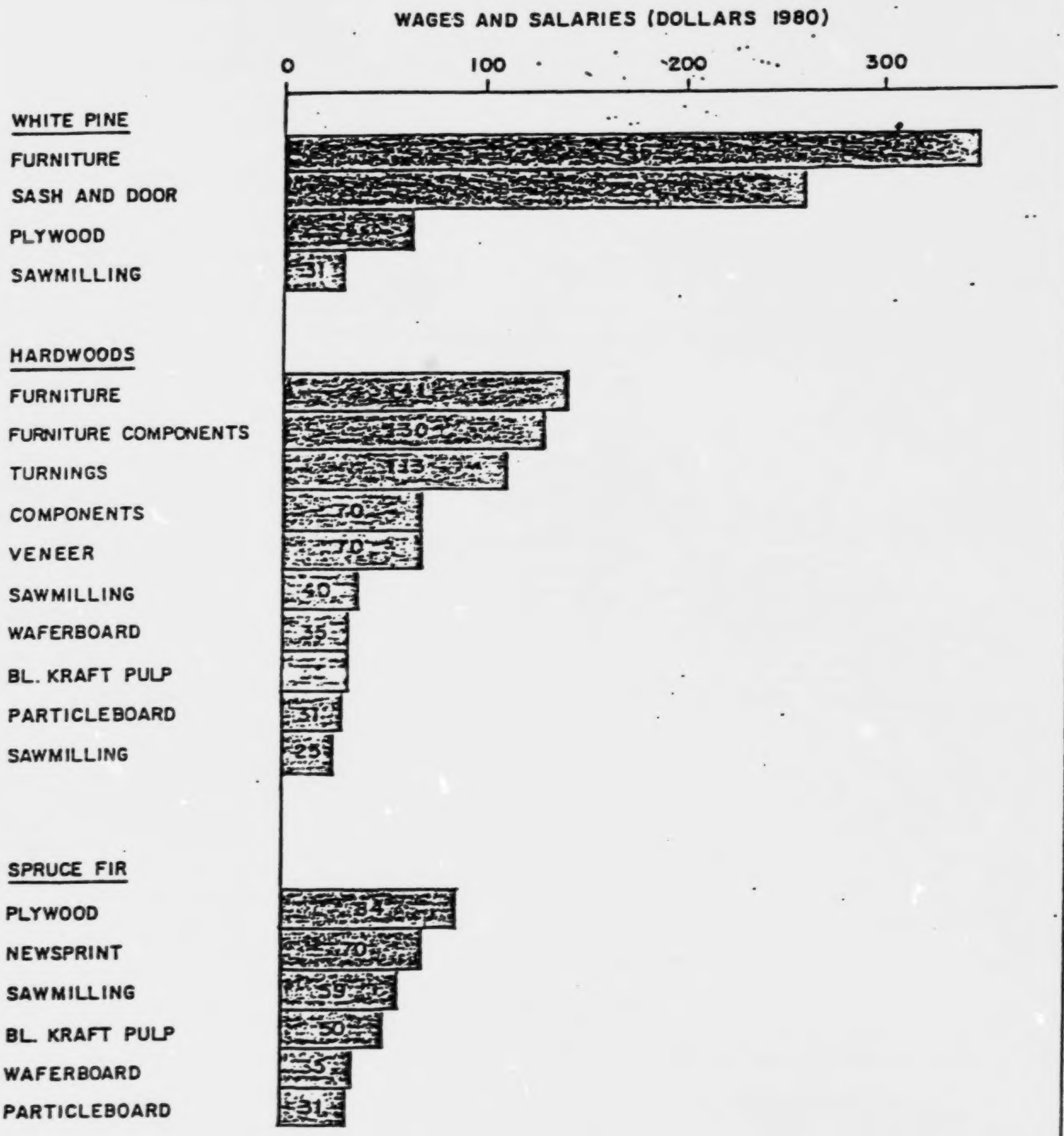
> "Selling and administrative costs" are incurred totally in-province by some wood users, and largely out-of-province by others.
>
> "Capital cost allowance" is of significant benefit to New Brunswick only if the production machinery is manufactured in the province. This is rarely the case.
>
> "Profit" may or may not remain in the province.

Wage and salary statistics and wood utilization statistics for specific individual end products are available and relatively reliable. Cumulative wages and salaries can be calculated with reasonable confidence for multiple end products. It is therefore recommended that wages and salaries generated per unit of roundwood input be adopted as the interim basis for comparison of relative benefits to the Province from alternative end uses of its roundwood resources, until further review and refinement of the overall "value added" basis of comparison is completed.

Attached are brief summaries of relative benefits based on 1979-80 industry data, and prepared in accordance with the above recommendation.

## BENEFITS FROM ALTERNATIVE WOOD USES

(BASED ON 100 CUBIC FEET ROUNDWOOD INITIAL INPUT)



SOURCE - COMMERCE & DEVELOPMENT

## WHITE PINE

## RELATIVE BENEFITS FROM ALTERNATIVE END USES

Based on 100 Cu. Ft. Roundwood Initial Input

| PRODUCT(S) | WAGES & SALARIES (DOLLARS) |
|---|---|
| Furniture | 346 |
| Sash & Door | 259 |
| Plywood | 64 |
| Sawmilling | 31 |

Source: Commerce & Development
September, 1980

## SPRUCE-FIR

## RELATIVE BENEFITS FROM ALTERNATIVE END USES

Based on 100 Cu. Ft. Roundwood Initial Input

| PRODUCT(S) | | WAGES & SALARIES (DOLLARS) | |
|---|---|---|---|
| Plywood: | Plymill | 64 | |
| | Chips to Kraft Pulp | 20 | 84 |
| Newsprint | | 70 | |
| Sawmilling: | Sawmill | 30 | |
| | Chips to Kraft Pulp | 22 | |
| | Shavings & dust to particleboard | 7 | 59 |
| Bl. Kraft pulp | | 50 | |
| Waferboard | | 35 | |
| Particleboard | | 31 | |

Source: Commerce & Development
September, 1980

## HARDWOODS

## RELATIVE BENEFITS FROM ALTERNATIVE END USES

Based on 100 Ct. Ft. Roundwood Initial Input

| PRODUCT(S) | WAGES & SALARIES (DOLLARS) |
|---|---|
| Furniture & Pallets | 141 |
| Moulded Furniture Components | 130 |
| Turnings (& Pallets) | 113 |
| Components (& Pallets) | 70 |
| Veneer (Dried & Graded) | 70 |
| Sawmilling, chips to kraft pulp | 40 |
| Waferboard | 35 |
| Bl. Kraft Pulp | 35 |
| Particleboard | 31 |
| Sawmilling, slabs to fuel | 25 |

Source: Commerce & Development,
September, 1980

References:

- Yaakko Poyry & Co., Oct. '72: A comparison of value added and some other features of different forest industries.

- Report of the Review group on the 1974 Forest Resources Study. Internal report, C & D, June 1976.

- Sandwell & Co., 1977: Manufacturing cost analysis, North American Forest Products Industry (Prepared for F.I.D.C.)

- F.L.C. Reed & Associates, 1977: Forest Industry Rationalization, a Pilot Study of New Brunswick, Vol. 3 (Prepared for F.I.D.C.)

- Various Statistics Canada publications and reports.

## NEW BRUNSWICK PRIMARY

## FOREST PRODUCTION

Cubic Feet

| Year Ending | Small Holdings | Large Freehold | Crown Lands | Total |
|---|---|---|---|---|
| March 31, 1981 | 93,672,000 | 76,764,000 | 131,648,000 | 302,084,000 |
| March 31, 1980 | 91,290,000 | 70,532,000 | 154,548,000 | 316,371,000 |
| March 31, 1979 | 73,873,000 | 78,130,000 | 145,329,000 | 297,332,000 |
| March 31, 1978 | 76,935,000 | 66,602,000 | 120,962,000 | 264,499,000 |
| March 31, 1977 | 83,786,000 | 64,374,000 | 108,421,000 | 256,581,000 |
| March 31, 1976 | 47,122,000 | 68,598,000 | 119,725,000 | 235,445,000 |
| March 31, 1975 | 36,937,000 | 78,612,000 | 164,301,000 | 279,850,000 |
| March 31, 1974 | 49,335,000 | 96,909,000 | 164,960,000 | 311,204,000 |
| March 31, 1973 | 37,152,000 | 83,366,000 | 124,874,000 | 245,392,000 |
| March 31, 1972 | 35,844,000 | 78,559,000 | 108,078,000 | 222,481,000 |
| March 31, 1971 | 41,462,000 | 84,934,000 | 97,301,000 | 223,697,000 |
| March 31, 1970 | 60,215,000 | 73,206,000 | 100,625,000 | 234,046,000 |
| March 31, 1969 | 64,055,000 | 65,653,000 | 105,948,000 | 235,656,000 |
| March 31, 1968 | 51,827,000 | 64,025,000 | 87,083,000 | 202,935,000 |
| March 31, 1967 | 61,834,000 | 60,689,000 | 91,473,000 | 213,996,000 |
| March 31, 1966 | 53,939,000 | 49,061,000 | 83,330,000 | 186,330,000 |
| March 31, 1965 | 60,278,000 | 39,119,000 | 90,395,000 | 189,792,000 |
| March 31, 1964 | 63,195,000 | 53,808,000 | 80,382,000 | 197,385,000 |
| March 31, 1963 | 38,899,000 | 38,577,000 | 63,721,000 | 141,197,000 |
| March 31, 1962 | 57,893,000 | 48,016,000 | 74,876,000 | 180,785,000 |
| March 31, 1961 | 53,900,000 | 41,857,000 | 67,155,000 | 162,912,000 |
| March 31, 1960 | 62,241,000 | 43,304,000 | 69,165,000 | 174,710,000 |

Source: Dept. of Natural Resources

## TOTAL INDUSTRIAL ROUNDWOOD HARVESTED AND CONSUMED IN N.B. IN CUNITS

### Pulp and Saw Mills

| | Ownership Class | Softwood | Cedar | White Pine | Hardwood |
|---|---|---|---|---|---|
| 1981 | Crown | 1,113,406 | 14,947 | 37,609 | 150,513 |
| | Own Freehold* | 552,944 | 2,032 | 1,946 | 77,067 |
| | Large Freehold | 54,445 | 12,211 | 1,003 | 65,994 |
| | Small Freehold | 722,601 | 27,452 | 10,839 | 175,826 |
| | TOTAL | 2,443,396 | 56,642 | 51,397 | 469,400 |
| 1980 | Crown | 1,326,662 | 17,982 | 43,403 | 157,429 |
| | Own Freehold | 480,916 | 1,797 | 2,051 | 77,367 |
| | Large Freehold | 70,865 | 11,660 | 2,930 | 57,741 |
| | Small Freehold | 702,192 | 19,001 | 14,975 | 176,735 |
| | TOTAL | 2,580,635 | 50,440 | 63,359 | 469,272 |
| 1979 | Crown | 1,211,525 | 16,941 | 37,500 | 187,328 |
| | Own Freehold | 519,132 | 471 | 1,175 | 59,636 |
| | Large Freehold | 98,551 | 13,711 | 2,296 | 86,338 |
| | Small Freehold | 557,439 | 13,352 | 9,301 | 158,641 |
| | TOTAL | 2,386,647 | 44,475 | 50,272 | 491,943 |
| 1978 | Crown | 1,027,397 | 19,865 | 46,636 | 115,721 |
| | Own Freehold | 455,041 | 124 | 1,216 | 57,090 |
| | Large Freehold | 62,603 | 10,262 | 2,094 | 77,586 |
| | Small Freehold | 626,981 | 15,696 | 9,379 | 117,293 |
| | TOTAL | 2,172,022 | 45,947 | 59,325 | 367,690 |
| 1977 | Crown | 932,476 | 10,797 | 29,712 | 111,228 |
| | Own Freehold | 464,513 | 90 | 860 | 65,047 |
| | Large Freehold | 53,940 | 10,805 | 1,052 | 47,428 |
| | Small Freehold | 712,587 | 9,542 | 8,070 | 107,662 |
| | TOTAL | 2,163,516 | 31,234 | 39,694 | 331,365 |

---

Source: Timber Utilization Survey,
Forest Utilization Branch,
Department of Natural Resources,
New Brunswick.

* "Own Freehold" includes lands listed in the Forest Inventory under "Large Freehold" and "Small Freehold".

## N. B. SOFTWOOD PULP PRICES (Short Haul, 4 foot, except * = 8 foot, and + = 4' and 8')

$ PER CORD

| COMPANY | 1971 | 1975 | % | 1976 | % | 1977 | % | 1978 | % | 1979 | % | 1980 | % | 1981 | % | 1982 | % Increa 1971-82 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FRASER | 23.50 | 38.35 | 5.2 | 40.35 | 3.5 | 41.75 | 4.2 | 43.50 | 10.3 | 48.00 | 9.8 | 52.70 | 10.3 | 58.14 | 12.2 | 65.24 | 177.6 |
| C-B | 20.50 | 36.00 | 4.2 | 37.50 | 6.0 | 39.75 | 0.0 | 39.75 | 5.7 | 42.00 | 9.3 | 45.90 | 17.1 | 53.76 | 13.5 | 61.00 | 197.6 |
| NBIP | 23.00 | 33.37 | 9.4 | 36.50 | 6.8 | 39.00 | 0.5 | 39.20* | 14.3 | 44.80* | 11.2 | 49.80* | 13.7 | 56.63* | 9.8 | 62.20* | 194.7 |
| IRVING | 22.50 | 31.00 | 16.1 | 36.00 | 5.5 | 38.00 | 5.3 | 40.00 | 7.5 | 43.00 | 11.9 | 48.10 | 16.9 | 56.25 | 13.8 | 64.00 | 184.4 |
| ROTHESAY | 21.75 | 35.00 | 5.7 | 37.00 | 4.1 | 38.50 | 3.9 | 40.00 | 8.8 | 43.50 | 7.1 | 46.61 | 21.8 | 56.75 | 12.8 | 64.00 | 194.2 |
| ACADIA | 21.50 | 35.50 | 7.0 | 38.00 | 0.0 | 38.00 | 2.6 | 39.00 | 9.5 | 42.70+ | 10.1 | 47.00+ | 14.5 | 53.80+ | 13.4 | 61.00+ | 183.7 |
| BOISE | 21.00 | 36.50 | 2.7 | 37.50 | 2.7 | 38.50 | 1.3 | 39.00 | 9.2 | 42.60* | 10.1 | 46.90* | 14.7 | 53.80* | 13.4 | 61.00* | 216.5 |
| G. P. | 21.00 | 31.00 | 9.7 | 34.00 | 15.9 | 39.40 | 8.9 | 42.90 | 7.0 | 45.90 | | | | | | | |
| AVERAGE | 21.84 | 34.59 | 7.2 | 37.10 | 5.4 | 39.11 | 4.5 | 40.86 | 10.2 | 45.04 | 9.6 | 49.38 | 15.4 | 57.00 | 12.6 | 64.21 | 192.7 |

## N. B. HARDWOOD PULPWOOD PRICES (Short haul, 4 foot)

$ PER CORD

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VALLEY | | 21.24 | 28.5 | 27.30 | 2.8 | 28.08 | 8.0 | 30.32 | 7.5 | 33.01 | 11.3 | 36.75* | 11.1 | 40.86* | 10.9 | 45.31* | |
| NORTHWOOD | | | | | | | | 34.00 | 10.3 | 37.50 | 8.5 | 40.70* | 10.4 | 44.95* | | | |
| C-B | | 29.50 | 6.0 | 30.75 | 6.0 | 32.60 | 0.0 | 32.60 | 5.5 | 34.40 | 11.0 | 38.18 | 16.1 | 44.33 | 12.1 | 49.69 | |

* 8 foot pulpwood to convert to 4' price divide by 0.78, multiply by 0.85 example - $62.20, 8' equals $67.78, 4'

8 foot hardwood to convert to 4' price, divide by 0.65, multiply by 0.70

SOURCE: N. B. Forest Products Commission records, and recent contracts.

## "Small Woodlot Utilization Project"

(Source: D.N.R. Forest Extension)

Production from land can be influenced by the market and the landowner's knowledge of local markets. The following pages are a report on a 14 acre property which was clear-cut, the first offer to the landowner was based on 12 to 15 cords per acre. The report indicates the volumes and value of the harvest operation.

# REPORT ON WASTE-WOOD UTILIZATION PROJECT, CHARLOTTE COUNTY, N.B.

The project was financed by Canada Works and the Forest Extension Serivce (Department of Natural Resources).

## PROJECT OBJECTIVES

Maximum forest products utilization with appropriate equipment based on small Farm-Woodlot Management.

## SITE SELECTION

On the selected woodlot the owner had stumpage and purchasing offer from third party. Stumpage 60-75 dollars per acre - purchasing offer $90 per acre. Stumpage was based on expected cut of 12-15 cord primary wood per acre.

## WOODLOT CONDITION

Uneven age timber stand which consisted of approximately 60% budworm damaged or killed forest. Very rough and wet ground condition.

## MANAGEMENT RECOMMENDATION

Clear cut, based on poor growth characteristic and condition of trees large windfalls, rot, etc.

## EQUIPMENT USED

| | |
|---|---|
| Farm tractor with farm winch on | 11.8 acres |
| Small skidder on | 2.4 acres |

The farm winch proved to be very useful and inexpensive in Farm-Woodlot Harvesting operation but has limitations on rough, wet ground.

The project showed that large amount of fiber are unused in most logging operations. Locally we had the advantage to sell all wood down to two inches in diameter. But everywhere in New Brunswick the secondary wood could be used as fuel replacement.

## TABLE 1

Following products have been harvested and sold from Carl Dunn Woodlot, DeWolfe Corner, St. Stephen. Area cut 14.2 acres, cords per acre 42.30

| | | Cord | Value Cord | Total Value |
|---|---|---|---|---|
| 1. | Logs 9404 fbm | 18.81 | $58.00 | $1,090.98 |
| 2. | Studwood | 62.73 | 40.60 | 2,546.83 |
| 3. | Pulp | 158.26 | 35.60 | 5,634.05 |
| 4. | Flakeboard No. I | 182.75 | 28.00 | 5,117.00 |
| 5. | Flakeboard No. II | 69.98 | 23.00 | 1,609.54 |
| 6. | Hardwood | 37.22 | 36.00 | 1,339.92 |
| 7. | Cedar | 53.49 | 33.00 | 1,765.17 |
| 8. | Rails | 17.40 | 60.00 | 1,044.00 |
| | | 600.64 | Total | $20,147.49 |
| | | | Per acre | $ 1,418.83 |

## TABLE II

Products harvested on Carl Dunn Woodlot, DeWolfe Corner, St. Stephen. Area cut 14.2 acres, cord per acre 42.30, income acre $1,418.83

### PRIMARY WOOD PRODUCTS

| | | Total Cords | Cords per Acre | Value Acre |
|---|---|---|---|---|
| 1. | Logs | 18.81 | 1.33 | $ 77.14 |
| 2. | Studwood | 62.73 | 4.42 | 179.45 |
| 3. | Pulp | 158.26 | 11.15 | 396.94 |
| | Total | 239.80 | 16.90 | $653.53 |

239.80 cords = 39.9% $653.53 = 46.1%

### SECONDARY WOOD PRODUCTS

| | | Total Cords | Cords per Acre | Value Acre |
|---|---|---|---|---|
| 4. | Flakeboard I | 182.75 | 12.87 | 360.36 |
| 5. | Flakeboard II | 69.98 | 4.93 | 113.39 |
| 6. | Hardwood | 37.22 | 2.62 | 94.32 |
| 7. | Cedar | 53.49 | 3.77 | 124.41 |
| 8. | Rails | 17.40 | 1.21 | 72.82 |
| | Total | 360.84 | 25.40 | $765.30 |

360.84 cords = 60.1% $765.30 = 53.9%

600.64 cord Total Inc. Acres $1,418.83

## TABLE III

Products harvested on Carl Dunn Woodlot, DeWolfe Corner, St. Stephen. Area cut 14.2 acres, cord per acre 42.30 income $1,418.83

| | | Total Cord | = | Percentage | = | Total Income | = | Percentage |
|---|---|---|---|---|---|---|---|---|
| 1. | Logs | 18.81 | = | 3.13 | = | $ 1,090.98 | = | 5.41 |
| 2. | Studwood | 62.73 | = | 10.44 | = | 2,546.83 | = | 12.64 |
| 3. | Pulp | 158.26 | = | 26.35 | = | 5,634.05 | = | 27.96 |
| 4. | Flakeboard I | 182.75 | = | 30.42 | = | 5,117.00 | = | 25.40 |
| 5. | Flakeboard II | 69.98 | = | 11.65 | = | 1,609.54 | = | 7.99 |
| 6. | Hardwood | 37.22 | = | 6.20 | = | 1,339.92 | = | 6.66 |
| 7. | Cedar | 53.49 | = | 8.91 | = | 1,765.17 | = | 8.76 |
| 8. | Rails | 17.40 | = | 2.90 | = | 1,044.00 | = | 5.18 |
| | | 600.64 | = | 100.00 | = | $20,147.49 | = | 100.00 |

## TABLE IV

Stumpage paid on 14.2 acres to Carl Dunn Woodlot

| | | Cords | Cords | | |
|---|---|---|---|---|---|
| 1. | Logs $30 per 1,000 fbm = | $15.00 | 18.81 | = | $282.15 |
| 2. | Studwood | 9.00 | 62.73 | = | 564.57 |
| 3. | Pulp | 6.00 | 158.26 | = | 949.56 |
| 4. | Flakeboard I | 3.00 | 182.75 | = | 548.25 |
| 5. | Flakeboard II | - | 69.98 | = | - |
| 6. | Hardwood | 6.00 | 37.22 | = | 223.32 |
| 7. | Cedar | 4.00 | 53.49 | = | 213.96 |
| 8. | Rails | 3.00 | 17.40 | = | 52.20 |
| | | | 600.64 | | |

Stumpage paid on 530.66 =$2,834.01

Deduction for road building $1.00 per cord 530.60

Net Stumpage $2,303.41

Stumpage per acre 162.21

## TABLE IV

### Stumpage paid on 14.2 acres to Carl Dunn Woodlot

| | | Cords | Cords | |
|---|---|---|---|---|
| 1. | Logs $30 per 1,000 fbm = | $15.00 | 18.81 = | $ 282.15 |
| 2. | Studwood | 9.00 | 62.73 = | 564.57 |
| 3. | Pulp | 6.00 | 158.26 = | 949.56 |
| 4. | Flakeboard I | 3.00 | 182.75 = | 548.25 |
| 5. | Flakebaord II | - | 69.98 | - |
| 6. | Hardwood | 6.00 | 37.22 = | 223.32 |
| 7. | Cedar | 4.00 | 53.49 = | 213.96 |
| 8. | Rails | 3.00 | 17.40 = | 52.20 |
| | | | 600.64 | |
| | Stumpage paid on | | 530.66 = | $2,834.01 |
| | Deduction for road building $1.00 per cord | | | 530.60 |
| | Net Stumpage | | | $2,303.41 |
| | Stumpage per acre | | | 162.21 |

## TABLE V

### PRODUCT SPECIFICATION

| | | |
|---|---|---|
| 1. | Logs | Minimum diameter 12.0", length 12.0 - 16.0 feet Species - spruce, pine. Condition - sound, no defects |
| 2. | Studwood | Minimum diameter 6.0", length 8.4 feet Species - spruce, pine, fir. condition - sound, no defects |
| 3. | Pulp | Minimum diameter 4.0", length 4.0 feet Species - spruce, pine, fir. Condition - sound |
| 4. | Flakebaord I | Minimum diameter 4.0", length 4.0 feet Species - Poplar, pine, fir, spruce. Condition - fiarly sound 15% undersize wood excepted |
| 5. | Flakebaord II | Minimum diameter no requirement, length 4.0 feet Species - birch, maple, ash, tamarack Condition - sound |

Table V (continued)

| | | |
|---|---|---|
| 6. | Hardwood | Minimum diameter 4.0", length 4.0 feet<br>species - birch, maple, ash, tamarack<br>Condition - sound |
| 7. | Cedar | Minimum diameter 5.0", length 6.4 feet<br>Species - cedar only<br>Condition - sound |
| 8. | Rails | Minimum diameter 3.0", length 10.4"<br>Species - cedar, fir, spruce<br>Condition - sound |

FOREST EXTENSION SERVICE
Dept. of Natural Resources

A PROPERLY MANAGED 100 ACRES CAN PRODUCE EACH YEAR:

| | |
|---|---|
| 100 CORDS OF FIREWOOD | HEAT 20 HOUSES |
| 100 CORDS OF PULP | $5,000 |
| 10,000 CHRISTMAS TREES | $50,000 |
| 1,800 GALLONS OF SYRUP | $36,000 |

PLUS

PLEASURE AND ENJOYMENT

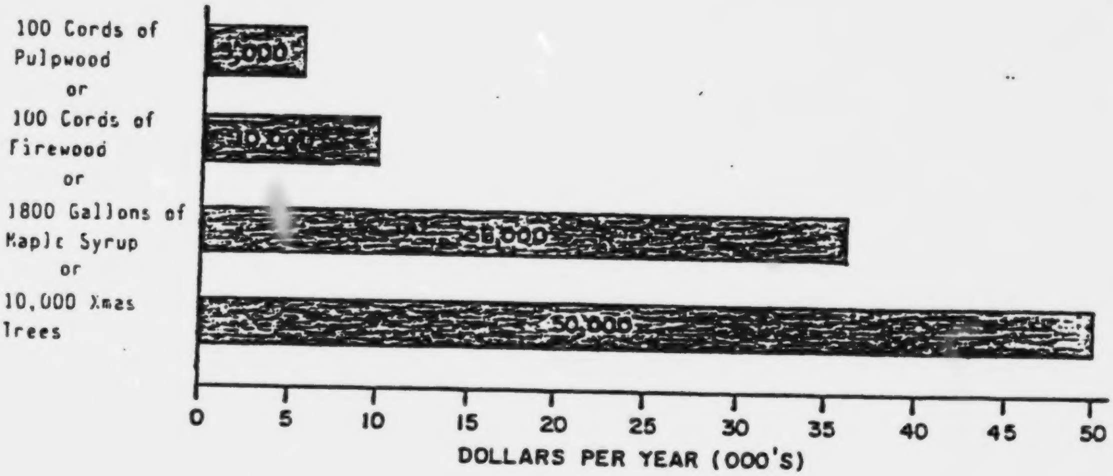
J. Hermelin

/vmc

January 1982

## FOREST LAND PRODUCTIVITY

100 Acres of Forest Land Can Produce
(on average if properly managed)



Plus Work, Pleasure and Enjoyment

100 Acres of Forest Land in N.B. Did Produce
on average in 1981 - $1,367

Source: Department of Natural Resources

# A WOODLOT

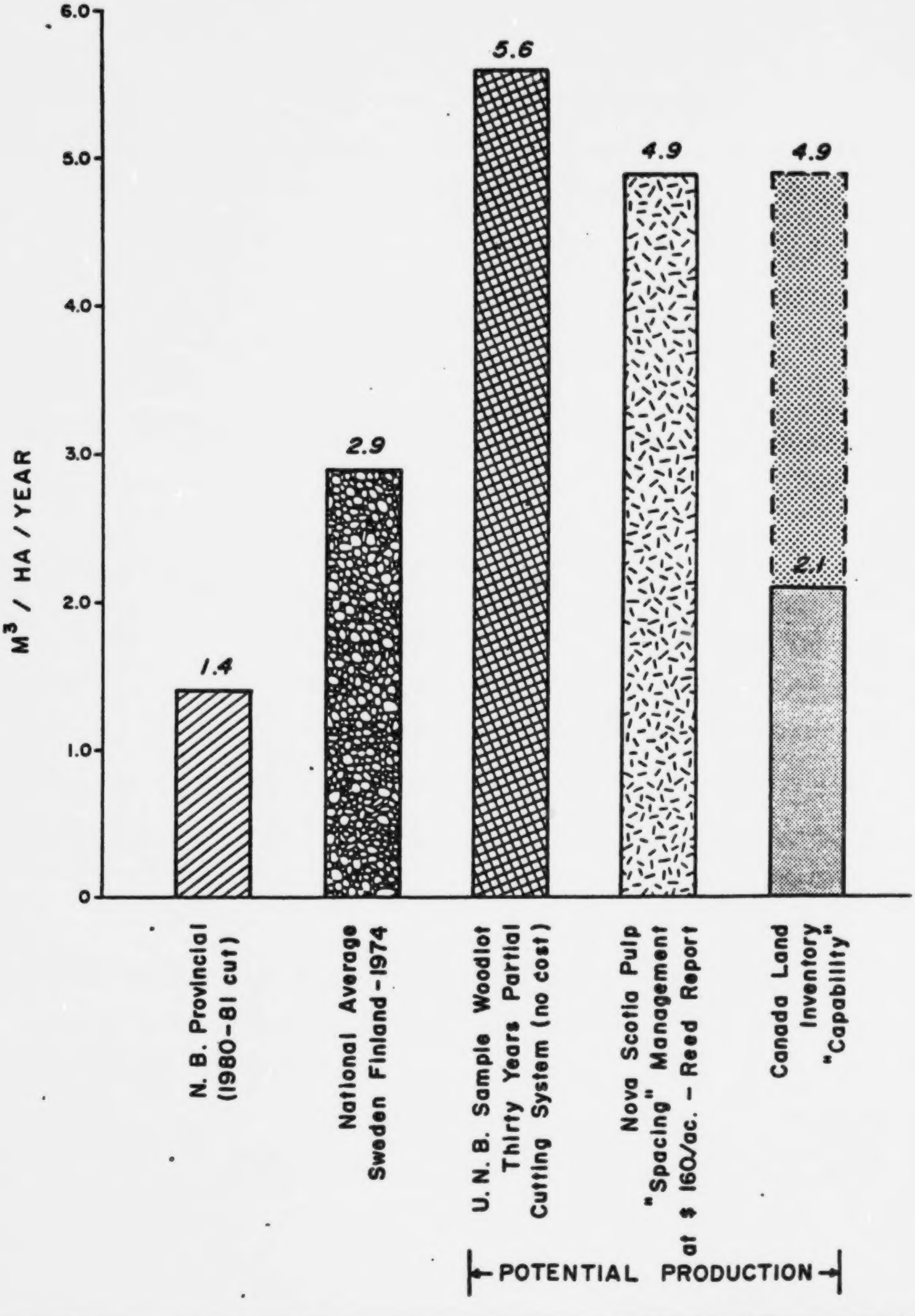
| GROWTH EQUALS 1/4 CORD/AC/YEAR<br>1 Man plus tractor producing pulp | 100 Acre Lot Growth 1/4 Cord (Basic) | 100 Acre Lot Growth 1 Cord (Managed) |
|---|---|---|
| **INVESTMENT REQUIREMENTS:** | | |
| A: Start up | $1,600-$2,200 | $1,600-$2,200 |
| B: Operating Costs | $7.20-$9.00/cord | $7.20-$9.00/cord |
| (Based on Production/ac) | $180.-$225.) | ($720.-$900.) |
| **PRODUCTION:** | 25 Cords | 100 Cords |
| **REVENUE:** | | |
| A: Stumpage @ $10.00/Cord (No labour or cost) | $250. | $1,000. |
| B: Road Side Cut & Piled ($40. - $45.) | $1,000-$1,125. | $4,000.-$4,500. |
| **LABOUR REQUIREMENTS:** (Softwood Only) | 10-15 Days | 40-60 Days |

NOTE: Production of fuelwood
increases labour intensity
and may increase revenue

Source: Department of Natural Resources.

# FOREST PRODUCTION COMPARISONS

## Actual, with jurisdictions and some possibilities



# REFORESTATION IN NEW BRUNSWICK CREATES JOBS

From rather modest beginnings in 1974, until 1980, the Department of Natural Resources has increased the area of plantations established annually on Crown Land to 27,000 acres. Correspondingly, the forest related companies established some 18,000 acres on their private land in 1980. Projections indicate this total annual reforestation program to be 60,000 acres by 1984. The number of acres has been determined from analysis of forest development and the demand for wood in the future. The reforestation work involved, provided jobs of one month to one year duration for approximately 1,880 New Brunswickers in 1980.

For those interested in analyzing this relatively new employment opportunity the 1,880 jobs represented 376 man years in 1980 and it is expected 485 (2,360 jobs) will be required in 1984. The two activities providing the largest number of jobs in 1984 will be tree planting and forest nurseries with 275 and 120 man years respectively. The remaining man years will be associated with cone collection, seed extraction, site preparation, plantation tending and tree improvement.

In any one year the reforestation work consists initially of cone collection to obtain seed for seedlings that are grown in the forest nurseries. The cones are collected from selected natural stands throughout the provincial forest by crews manually picking from felled trees. The cones are then shipped to a central seed extraction plant at Kingsclear where they undergo heat and mechanical treatment to remove and clean the seed. The seed is then kept in refrigerated storage until needed by the nurseries. Growing the crop in the forest nurseries (there are presently 8 in the Province) involves a large labour component even though seeding, fertilization, watering and some field activities have been mechanized much like agricultural crops. There still remains the painstaking thinning of individual seedlings as they become mature, lifting the seedlings from fields in the spring, grading, packing and storage for shipment to the planting site.

In some instances the crop is grown to maturity in approximately four months through the use of greenhouses whereas other crops are grown outdoors in seedbeds over a period of two to four years, depending on the species.

Before the young seedlings are planted on cutovers throughout the Province some type of mechanical scarification treatment or a prescribed burn precedes the planting. Although this activity utilizes heavy equipment such as crawler tractors, skidders, plows and drags, some 100 people are employed as operators, maintenance personnel and supervisors from April until December.

Once the seedlings arrive on the planing sites from the nurseries they are individually planted with hand tools by crews of 10 - 30 men and women. The work is carefully checked by people employed for that purpose only. The planing is carried out from May until September. Early in the life of the new plantations they often require treatment to remove competing, undesirable vegetation which again involves manpower to either manually "cut out" the undesirable or to implement chemical weed control.

Another on-going activity providing jobs associated with reforestation is the tree improvement program. This work has the objective of providing seed for faster growing and better formed trees in the future. Considerable labour is involved in collecting seed from superior trees in the forest, growing the seedlings and outplanting them in seed orchards. It is expected that a large proportion of New Brunswick's forest seed requirements will be obtained from these orchards, commencing in the 1990's.

Besides this employment centred on Crown and large freehold forests, woodlot owners, through governmental incentive programs, employ numerous people throughout the Province in planting and other aspects of forest management.

The total effect of jobs directly concerned with forest establishment and development can be appreciated in the fact that the provincial programs are valued at more than $10,000,000.

## Employment Generated
## by N.B. Reforestation Program
## Man Years

| | 1980 (DNR at 27mm trees) (Industry at 18 mm trees) | 1984 Immediate Future (DNR at 30mm trees) (Industry at 30 mm trees) |
|---|---|---|
| Cone Collection | | |
| DNR | 5 | 10 |
| Industry | 7 | 10 |
| | 12 | 20 |
| Seed Extraction | | |
| DNR | 1 | 2 |
| Industry | .5 | - |
| | 1.5 | 2 |
| Nursery Seedling Production | | |
| DNR | 60 | 60 |
| Industry | 40 | 60 |
| | 100 | 120 |
| Site Preparation | | |
| DNR | 14 | 15 |
| Industry | 11 | 15 |
| | 25 | 30 |
| Planting | | |
| DNR | 130 | 138 |
| Industry | 83 | 138 |
| | 208 | 276 |
| Plantation Tending | | |
| DNR | 2.5 | 5 |
| Industry | 3 | 5 |
| | 5.5 | 10 |
| Tree Improvement | | |
| DNR | 11 | 14 |
| Industry | 8 | 10 |
| | 19 | 24 |
| Total Employment (Man Years) | 376 (1,880 jobs) | 482 (2,360 jobs) |
| Including Thinning | 451 (2,256 jobs) | 771 (3,776 jobs) |

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# Inter - Office Memo
# Note Interservices

Your File No:
Votre réf.:

Department of:
Ministère: Natural Resources

Our File No.:
Notre réf.:

To:
A: F. Cardy

Date: Nov. 5th, 1982

From:
De: M. K. Barteaux

Copies To:
Copies à:

Subject:
Objet:

77-1185 (1/

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My numbers include all intensive forest management except thinning.

I would estimate that thinning would add 20% to my 1980 estimate and 60% to my 1984 estimate.

i.e. my estimate, bottom of p. F11 would be 3,800 rather than 4,400.

.................................
M.K.B.

M25

[illegible]
P.O. Box 6000
FREDERICTON, N.B.
E3B 5H1

NEW BRUNSWICK
NOUVEAU-BRUNSWICK
TELEPHONE 506-453-2196

[illegible]
C.P. 6000
FREDERICTON, N.-B.
E3B 5H1

4 November 1982

Mr. H. W. B. Oldham, R.P.F.
President
Association of Registered
Professional Foresters of
New Brunswick
500 Beaverbrook Court
Fredericton, New Brunswick
E3B 5X4

Dear Hap:

Re: Man Years of Employment for Forest Management in the Province of New Brunswick

I was recently involved in determining estimates of the man years of employment needed in the application of silvicultural treatments to the forests of New Brunswick. As I have been saying for the last 5 years I think it is ridiculous that the Federal Government through the U.I.C. program is spending a quarter of a billion dollars annually in the Province of New Brunswick without any long range benefits.

I consulted with Mr. Franklin Cardy, the Chairman of a Land Use Committee initiated by Provincial Deputy Ministers. With input from the New Brunswick Forest Extension Service and my knowledge of private woodlot management and forest industrial land management, a conservative estimate was made that 4,500 man years per year of silvicultural treatments over a period of 50 years would result in tripling the productivity of New Brunswick forests. This is a very significant figure - a job creation program of this magnitude could provide long range benefits worth going after.

I feel these estimates should be given full professional credence as well as determining whether they are realistic or not. I would request that the executive of A.R.P.F.N.B. consider forming a committee from our membership representing government (federal and provincial), industry, consultants and university to assess the foregoing estimates. For instance, 5 man years per 100 hectares was used for the private woodlot sector and 3 man years per 100 hectares was used for industrial lands and crown lands.

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I would be willing to serve on such a committee. Such a realistic assessment could have a definite bearing in directing funding for this very important responsibility of the forestry profession in the Province.

Yours sincerely,

J. Ian MacDonald, R.P.F.
Secretary to the
New Brunswick Forest Products Commission

JIM:lld

Copy: Mr. R. E. Hanusiak
Deputy Minister of Natural Resources

## INTENSIVE FOREST MANAGEMENT

## ADDITIONAL WORK REQUIRED (ESTIMATED)

On 100 hectares over 50 years

### Softwood

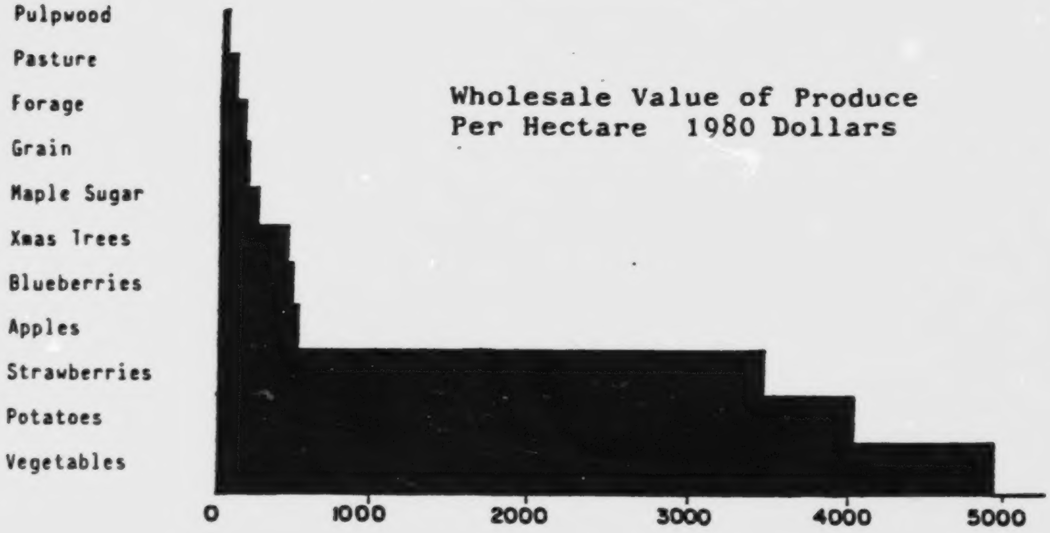
| Stand Establishments: | Man-Years |
|---|---|
| Site preparation | 0.1 |
| Planting | 1.0 |
| Hardwood Control | 0.1 |
| Pre-Commercial Thinning | 1.0 |
| **Stand Management:** | |
| Commercial Thinning | 2.0 |
| Miscellaneous, Admin. etc., | 0.8 |
| | 5.0 |

Conclusion: On average, an additional $^{1}/_{10}$ man year is required for 100 hectares per year, for intensive management.

Note:
1. This does not include harvesting or existing average levels of effort.
2. This applies to small parcels.
3. Average for large parcels would be about 3 man years over 50 years.

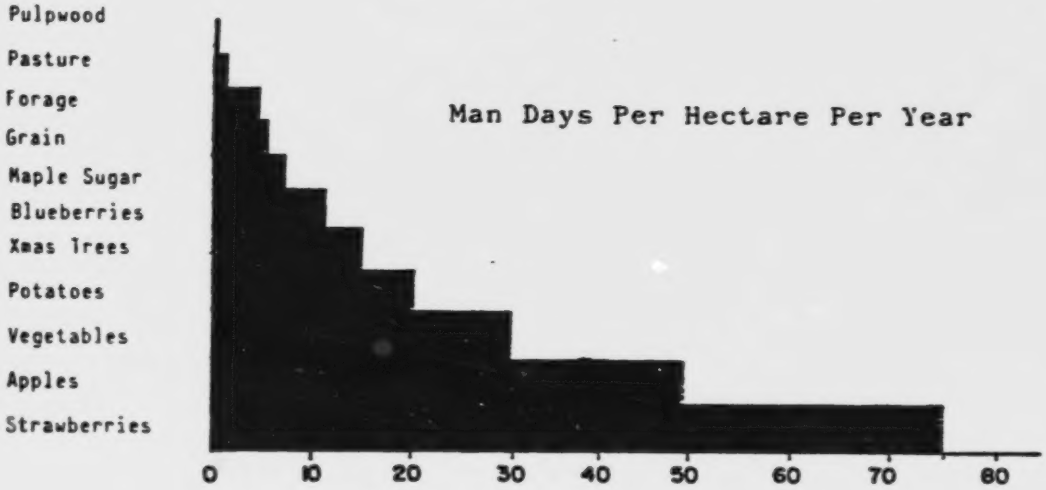
Source: Department of Natural Resources.

## COMPARATIVE CROP VALUES



Source: Statistics Canada

## COMPARATIVE WORK REQUIREMENT



Source: Department of Agriculture and Rural Development, Department of Natural Resources & Statistics Canada.

# THE BILLION DOLLAR CHALLENGE

## WE HAVE THE LAND

We have a huge reserve of agricultural land in Atlantic Canada waiting to be used. **It's enough for an additional 10,000 commercial farms.**

We have 6,500,000 acres of potential agricultural land in our four Provinces located in blocks that are large enough to be suitable for commercial production. Only 28% of this acreage is currently cleared, and much of it is not producing to its maximum. The remaining 4,700,000 acres are still under forest.

**Agricultural land is generally much less expensive** in Atlantic Canada than in other food-producing areas in North America.

It has been estimated that if all of our potential commercial farm land was producing all that it could grow, our agricultural output in Atlantic Canada would be **at least eight times** its present size.

A three-fold increase within the next fifteen years is well within the range of possibility.

## WE HAVE THE MARKETS..

In Atlantic Canada, we are currently producing about **one half of the pork and one quarter of the beef and lamb** that are consumed within the region.

Apart from potatoes, we are producing **less than half of the vegetables** that could be grown and marketed within the Atlantic Region.

In addition to our local demand, we have traditional **export markets that can be expanded** for such products as apples, potatoes, blueberries, rutabagas, breeding stock, and balsam fir Christmas trees. There are also potential new export markets for vegetable protein crops and winter cereal grains that can be profitably produced in Atlantic Canada.

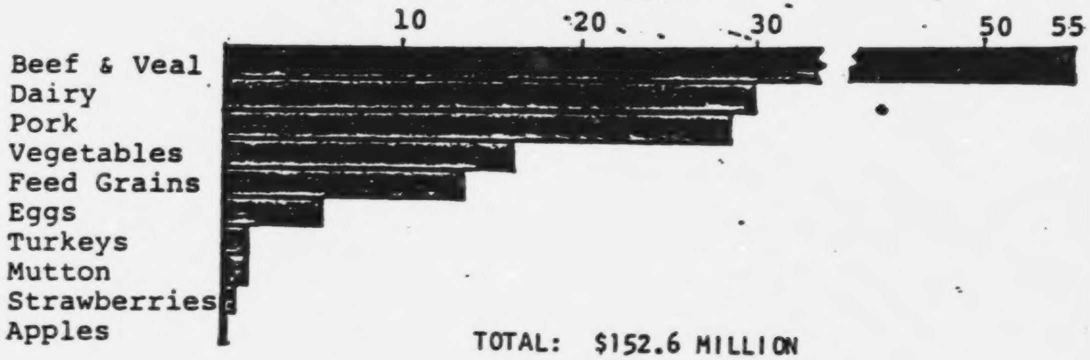
The population of the world is increasing, while the supply of land capable of producing food remains static. **This situation will surely present new opportunities for food production in Atlantic Canada** for local and export markets.

SOURCE: The Billion Dollar Challenge
Maritime Farmer's Council

## PROVINCIAL IMPORTS OF AGRICULTURAL PRODUCTS THAT COULD BE GROWN HERE

VALUE

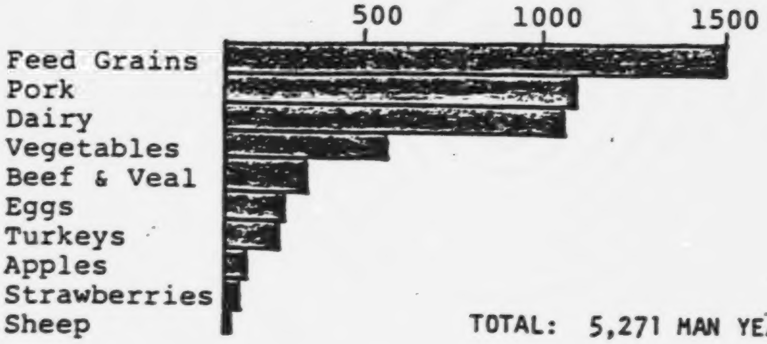
Million dollars 1979



TOTAL: $152.6 MILLION

WORK EQUIVALENT

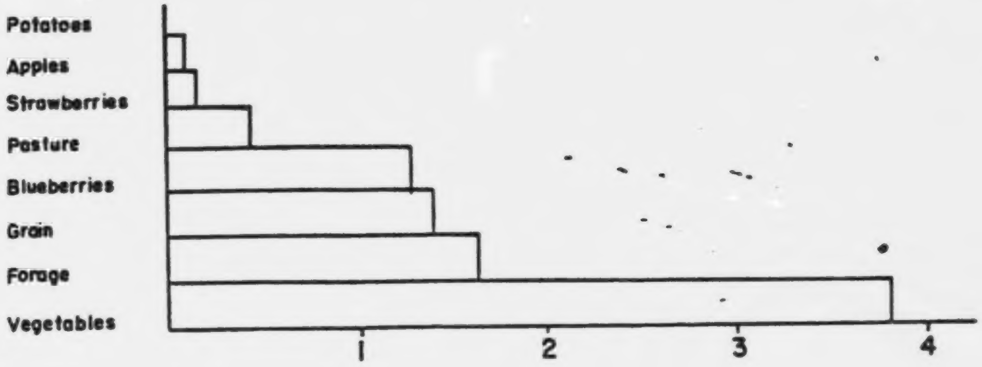
MAN YEARS



TOTAL: 5,271 MAN YEARS PER ANNUM

Source: N.B. Department of Agriculture and Rural Development and Statistics Canada

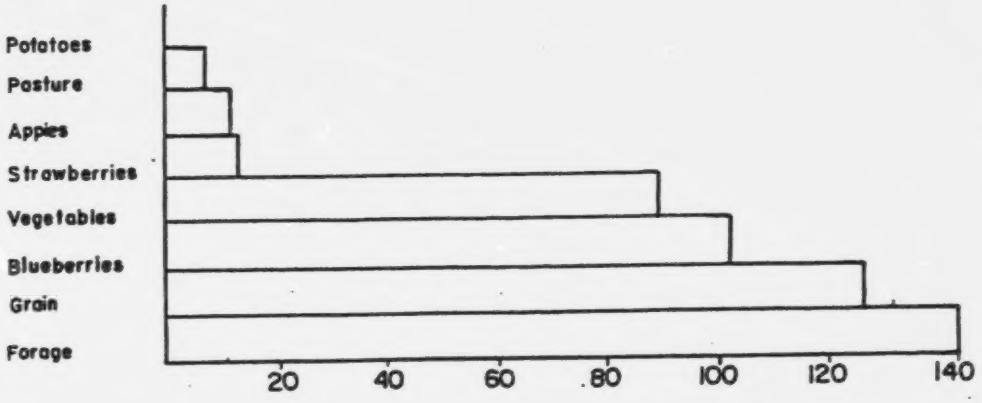
## CURRENT TRENDS IN AGRICULTURAL PRODUCTION



Projected Increased Value Per Annum $ Millions
1980-82

Source : N.B. Dept of Agriculture and Rural Development
Commodity Strategies

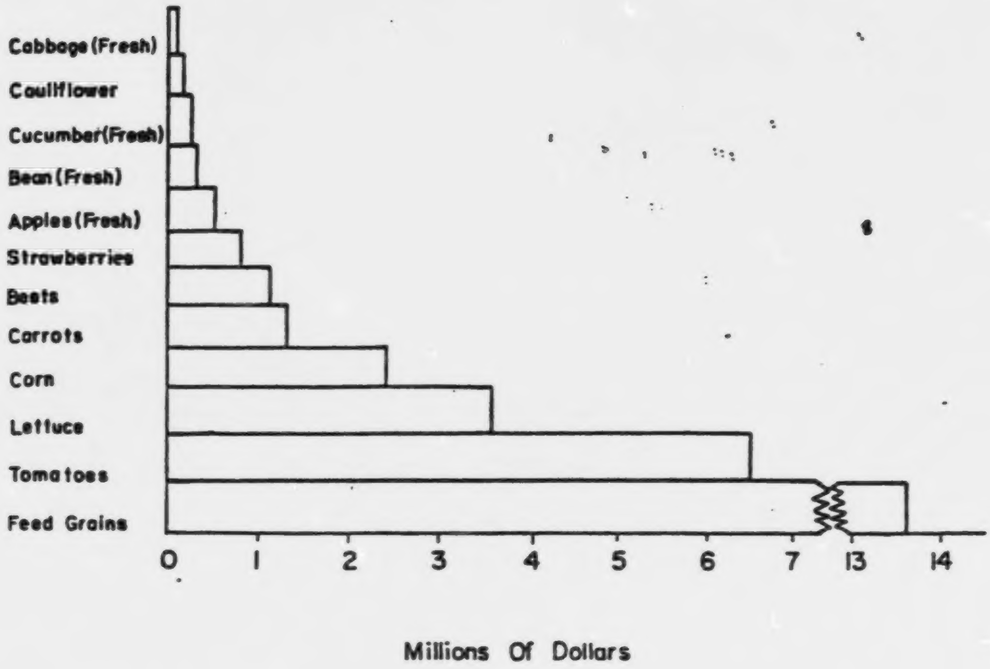
## CURRENT TRENDS IN AGRICULTURAL LABOUR



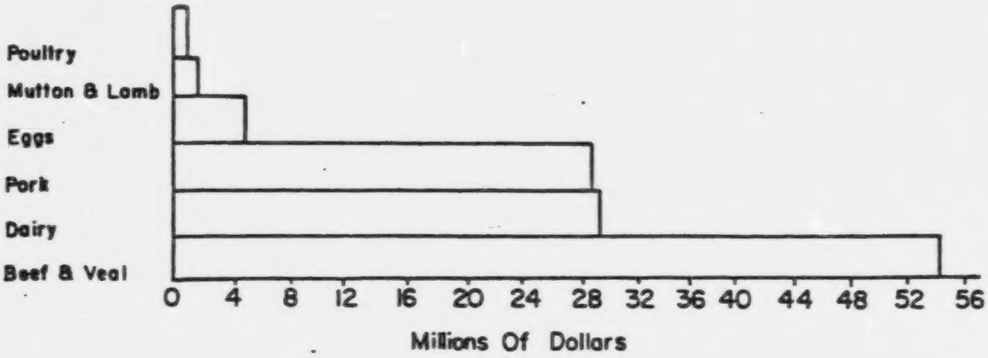
Projected Increased Man-Years Per Annum

Source : N.B. Dept of Agriculture and Rural Development
Commodity Strategies and Policy Manual

## PROVINICIAL IMPORTS OF AGRICULTURAL PRODUCE AND PRODUCTS THAT COULD BE GROWN AND / OR PRODUCED HERE FRUITS AND VEGETABLES



## LIVESTOCK AND LIVESTOCK PRODUCTS



Source: Statistics Canada 1979 Figures

## PROVINCIAL IMPORTS OF AGRICULTURAL PRODUCE AND PRODUCTS*

### Livestock & Livestock Products

| | Quantity<br>Thousands | Value<br>$ Thousands |
|---|---|---|
| Pork | 32,335 lbs. | 28,338 |
| Beef | 40,343 lbs. | 54,981 |
| Veal | 588 lbs. | |
| Mutton and Lamb | 983 lbs. | 1,727 |
| Poultry | 1,508 lbs. | 833 |
| Eggs | 4,943 doz. | 5,229 |
| Dairy | 100,000 litres | 29,687 |

### Fruit & Vegetables

| | | |
|---|---|---|
| Apples | 5,502 lbs. | 452 |
| Strawberries | 1,400 lbs. | 714 |
| Beans (fresh) | 658 lbs. | 290 |
| Beets | 899 lbs. | 1,185 |
| Cabbage (fresh) | 1,925 lbs. | 193 |
| Carrots | 8,426 lbs. | 1,348 |
| Cauliflower | 1,102 lbs. | 209 |
| Corn | 13,637 lbs. | 2,454 |
| Cucumbers (fresh) | 2,017 lbs. | 262 |
| Lettuce | 13,749 lbs. | 3,575 |
| Tomatoes | 21,967 lbs. | 6,590 |
| Feed Grain | 138,483 lbs. | 13,658 |
| Total Cost of Imports: | | $151,694 |

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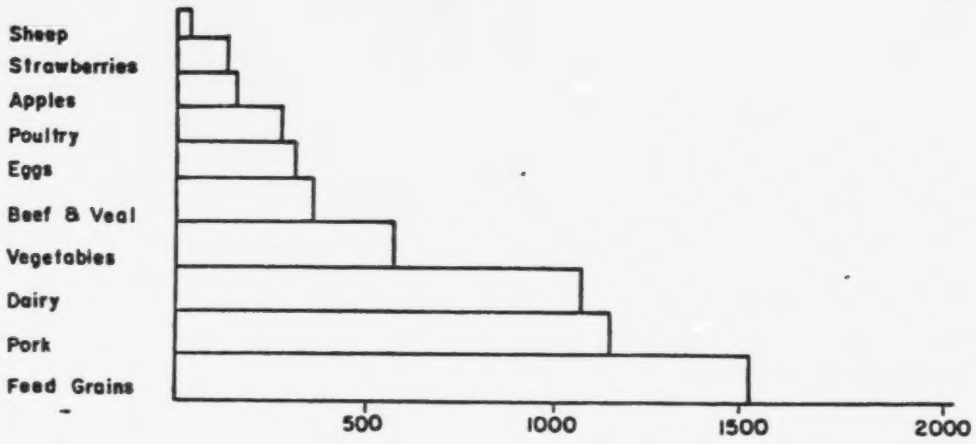
* Based on 1979 production figures from Statistics Canada.

# WORK AVAILABLE FROM REPLACEMENTS OF IMPORTS OF AGRICULTURAL PRODUCTS AND PRODUCE



Source: N.B. Dept Of Agricultural & Rural Development & Statistics Canada

# FISH AND WILDLIFE RESOURCE VALUES

## Fishery Resource Information:

New Brunswick's angling water value for Atlantic salmon has been estimated at $70 million (Toumi, 1980) and $110 million (Hooper, 1972).

New Brunswick had about 190,000 anglers in 1980, of which 50,000 were under 19 years of age. Value of licence sales totalled $595,171. About 10,000 of the anglers were non-residents.

Residents fished 1.1 million days in 1980, whereas non-residents fished 80,000 days. Residents and non-residents caught 4.5 million sport fish, representing a protein worth of $4.3 million.

Residents and non-residents spent $22 million on direct expenditures and major purchases. If indirect purchases are included, the total expenditure was $36 million in 1980.

The non-resident direct expenditure contribution from other economies (above) amounts to $3.1 million per year, of which $2.2 million is for salmon angling.

Value of licence sales (revenue) = $595,171.

## Deer Resource Information:

A dollar value has never been placed on the deer resource in New Brunswick. Approximately 104,896 residents purchased a $10.00 deer licence in 1981. They spent an estimated 630,000 man days hunting deer and bagged 20,905 deer.

Non-residents purchased 2,297 non-resident licences at $50.00 each. They shot and registered 867 deer. Total dressed weight for entire deer harvest in 1981 was estimated at 1.2 million kg (2.5 million pounds).

Spin-off expenditures for clothing, guns, ammunition, food, fuel and accommodations are considerable but have not been quantified. Aesthetics value is limitless.

John Baird is responsible for moose and all I can provide is that 4,892 residents paid $25.00 for a three day hunt and they took 1,434 moose. Spin-off and aesthetics considerations are similar to deer except that more specialized equipment is used in some cases and season is very short.

Big game hunting licence revenue:

| | |
|---|---|
| Resident deer licences: | $1,048,960 |
| Non-resident deer licences: | $114,850 |
| Moose licences (resident only): | $122,300 |
| TOTAL: | $1,286,110 |

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Fur Resource Information:

Number of furbearer pelts harvested 1981-82 = 58,882.

| | |
|---|---|
| Value of furbearer harvested 1981-82: | $1,077,850 |
| Approximate value of fur harvester licence sales - 4,000 licences at $10/licence: | $40,000 |
| Value of bear licence sales (1981) - | |
| Non-resident 790 at $25: | $19,750 |
| Resident 1,233 at $10: | $12,330 |

Number of bears killed approximately 352 -

172 by non-resident and
180 by resident.

D.N.R. has no estimate of value of this but the outfitters state that each bear killed is worth $1,500 to them - the average value of the bear killed by the non-resident may be approximately $75.

Fur Resource Total Value: $1,149,930

Source: Dept. of Natural Resources, Fish and Wildlife Branch.

## PRODUCTIVITY POSSIBILITIES

The history of New Brunswick - both socially and economically - is land. And, if the Province is to maintain or improve the quality of life, the land will be a major contributor to life in the future. In fact, the study of a 1786 grant of 200 acres in the Province was conditional on the grantee creating work by farming, quarrying or clearing swamp - he was expected to hire three "hands" (men) for every 50 acres granted.

Canadian land resources have, in the past 30 years, reached peaks in both Agriculture and Forestry. In Agriculture, class 1 and 2 lands are in full use and further increases in production by technology have levelled off. New areas with some agricultural restraints will be needed for the increased markets which have been forecast. New Brunswick has identified, in the Agriculture Resources Study, over one million acres of unused agricultural lands in the Province. The fact that Canada is now using all of the best agricultural land and the domestic and export markets can be exploited by the Province is an indicator of potential. The agricultural lands in the Province are of two types: (1) concentrated as in the St. John River Valley, and (2) integrated with Forestry lands along smaller rivers in most of the Province. A look at forestry potential will tie traditional land tenure to produce and service productivity.

Forestry in Canada - now producing 156 million cubic metres of wood - is forecast to produce 200 million $m^3$ in the year 2000. This fact and the employment of 300,000 jobs directly and 400,000 to 600,000 jobs indirectly (Forest Management in Canada 1978; F.L.C. Reed) offers the Province an opportunity to solve economic and unemployment problems. Markets for Canadian Forest Products have been forecast to the year 2000 (Forest Resource and Utilization in Canada to the year 2000, Environment Canada; Manning & Grimmell) and the increased market for both the United States and the United Kingdom should be very attractive to the Province of New Brunswick which has a combination of: (1) an accessible forest; (2) a large under-productive area; (3) a social and land tenure base which has production possibilities and opportunities, and (4) one of the highest unemployment rates in Canada. Each of these will be discussed in detail below.

(1) An accessible forest. The Province by its settlement pattern in the past 200 years created a road network between towns, cities and villages, serviced granted lots (about 35,000) and was well served by rail and ship facilities. Since 1950, the Crown lands have been made accessible by forest harvesting and by development of water and recreation resources. The final product is a completely accessible land resource

.../2

which, because of accessibility, can be protected, developed, managed and administered in a highly productive manner.

(2) The second item - "A large underproductive area" refers to the area between Crown land and the incorporated municipalities. A short historic sketch is desirable at this point.

New Brunswick was created in 1784 and settled by United Empire Loyalists at that time. Previous settlements were coastal, along rivers, and not significant. Land grants were given to settlers who cleared land and created farms. A peak in cleared land occurred in 1897 and the amount of cleared land has been reducing since that time.

The population, until the 1950's, farmed & worked in the forest during the winter and, in coastal areas, fished. Some areas developed and maintained the recreation/business of outfitting. With the chainsaw, mechanized logging and accessible forests (road network) the woods employment pattern changed. The cutting season became summer and fall, as compared to winter before 1950. The truck replaced the labour intensive river drive and the woods worker became a commuter, mechanically inclined high volume producer as compared to the bucksaw, horse using woodsmen of the first part of the century.

The trend to mechanization and the loss of farm markets to imported foods (agricultural report indicates we now import 150 million dollars worth of food which we can grow ourselves) combined with the change in forestry employment has created, in New Brunswick, the situation of about 30,000 or more parcels of land privately owned and underproductive in economic terms for both forest and agriculture. The Province created 35,000 farms and by 1980 finds that only 3,700 survived as census farms. The situation is recognized in 1982 by the Province in the creation of the Woodlot Resources Study which will attempt to find out how to make these lands productive. What are the possibilities for these lands?

First it must be recognized that they are a mixture in many ways, for example: residential - residential farm - residential forest - residential recreation - hobby farm - hobby forest - unoccupied speculative investment - unoccupied farm - unproductive farm - unproductive/unoccupied forest.

.../3

They also have potential for production in many ways and mixtures: farm only, forest only, recreation commercial only; recreation residential, recreation/forest/agriculture/water and forest, forest and farm, residential only, residential and mixed land productive.

From the above it can be seen that to make our land parcels productive we must recognize the mixtures: the resident/non-resident ownerships, the land use potentials which can be several on any one property, the administrative and educational problems of encouraging productivity and the need for coordination of land programs between government departments which have single use responsibilities.

(3) The above land tenure and productive possibility picture is compatible in New Brunswick social terms. Census figures show that the population has not followed the world pattern of rural to urban living to the same degree. New Brunswickers like to live rural. The fact that 35,000 individually owned parcels of land resources can be a strength in the new era of forest and agriculture products demands through land resource management.

(4) Statistics indicate constant high unemployment in the Province. No further comment is required except to indicate the historic land related interests of the Province's labour force and the land production opportunities.

What are the possibilities from land resources? Here are some:

(a) New Brunswick land grants were in the order of 100 acres (40 ha.) theoretically a parcel can produce each year:

| | | |
|---|---|---|
| 100 cds. fire wood | - | heat 20 houses |
| 100 cds. pulp | - | $5,000 |
| 10,000 Xmas trees | - | $50,000 |
| 1,800 gallons maple sugar | - | $31,000 |

From the Agriculture Resources study 1977, some viable Land uses are:

| Minimum Acres Required | Item | Viable | Income equality* |
|---|---|---|---|
| 100 (hay) | Fluid Milk (45 cows) | Yes | Yes |
| 60 (corn silage) | Fluid Milk (45 cows) | Yes | Yes |
| 200 acres Barley | Hay Farm (2000 feeder hogs) | Yes | Yes |
| 25 acres | Carrots | Yes | Yes |
| 30 acres | Apples | Yes | Yes |
| 30 acres | Strawberries | Yes | Yes |
| 150 acres | Potatoes at a price of 4/cwt | Yes | Yes |
| 40 acres | Christmas trees Plantation | Yes | Yes |

* income equality refers to a net form income similar to a non farm workers.

RHY:1982

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# LAND USE Possibilities

# for

# Isolated Small Crown Parcels

D.N.R. identified about 1500 (more or less) small ungranted parcels in New Brunswick's rural communities. These lots were probably meant to be granted but the occupiers (if any) failed to earn the grant and abandoned any claim - or the lots were never applied for. Whatever the cause the fact of Crown ownership remains. The Crown could consider the following uses after accepting the responsibility as a landowner to set an example and use the lands productively or dispose of the parcels by lease, sale or trade.

- Use as demonstration area for forest, farm recreation or water management(s) projects.

- Use as trade/exchange to create viable units with adjoining property owners (crown is considered just another land owner in this case).

- Use as special management area i.e. education, ecological reserve, water reserve.

- Use to advertise and encourage production of some land products by leasing for that production thus demonstrating (by remote control, so to speak) an opportunity.

- If on a Municipal watershed, develop multiple use Management Plan with the municipality for Forest/Recreation/Water Production. This case is essential as an "example-setting" role of the Province with a municipal unit. The land for municipal water supply must have a Management Protection ethic regardless of ownership - and joint governmental policies are required.

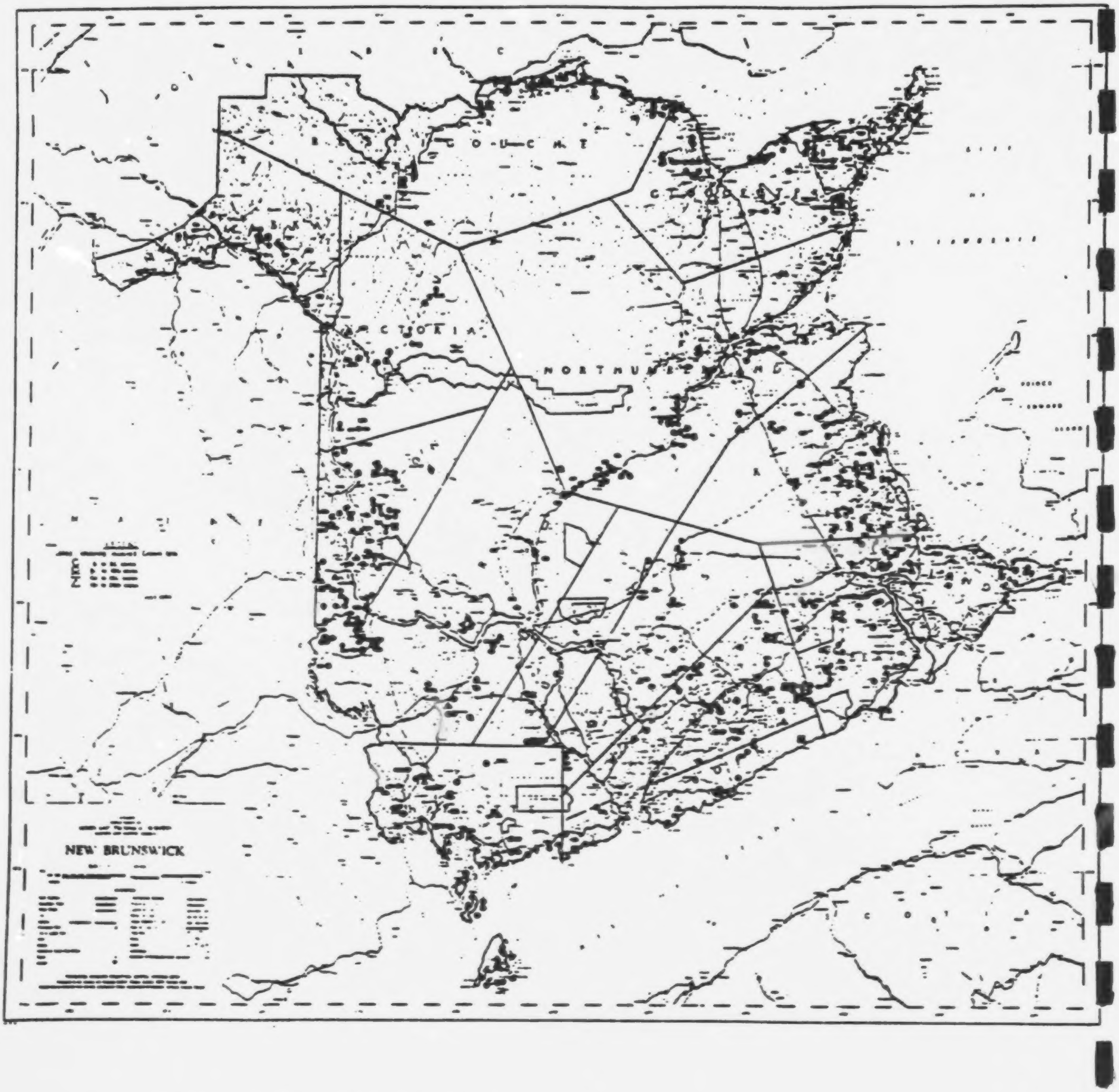
- Waste Disposal if found to be a non-conflict use and acceptable locally.

- Leased for Recreation use to commercial operators to either (1) create a business or (2) remove pressure from other land owners, i.e. snowmobile trails which is un-controlled cause damage to land - an organized business would give an alternative to un-controlled snowmobilling.

- Buffer zone for research projects, i.e., Plus tree plantations, Agriculture projects needing isolation by Forest

# ISOLATED CROWN LOTS

(Less than 200 acres)


NORTHUMBERLAND
VICTORIA
NEW BRUNSWICK

Source: D.N.R. Lands Branch

# LAND USE Possibilities

# for

# Crown Reserve Waterfront Properties

The Province after 1884, probably as a result of a crisis in salmon stocks, reserved 1 chain (66') reserves from grants issued. This was increased to 3 chains in 1924 for grants issued after that time.

For several reasons these reserves are especially valuable to the Province as "water management" critical areas.

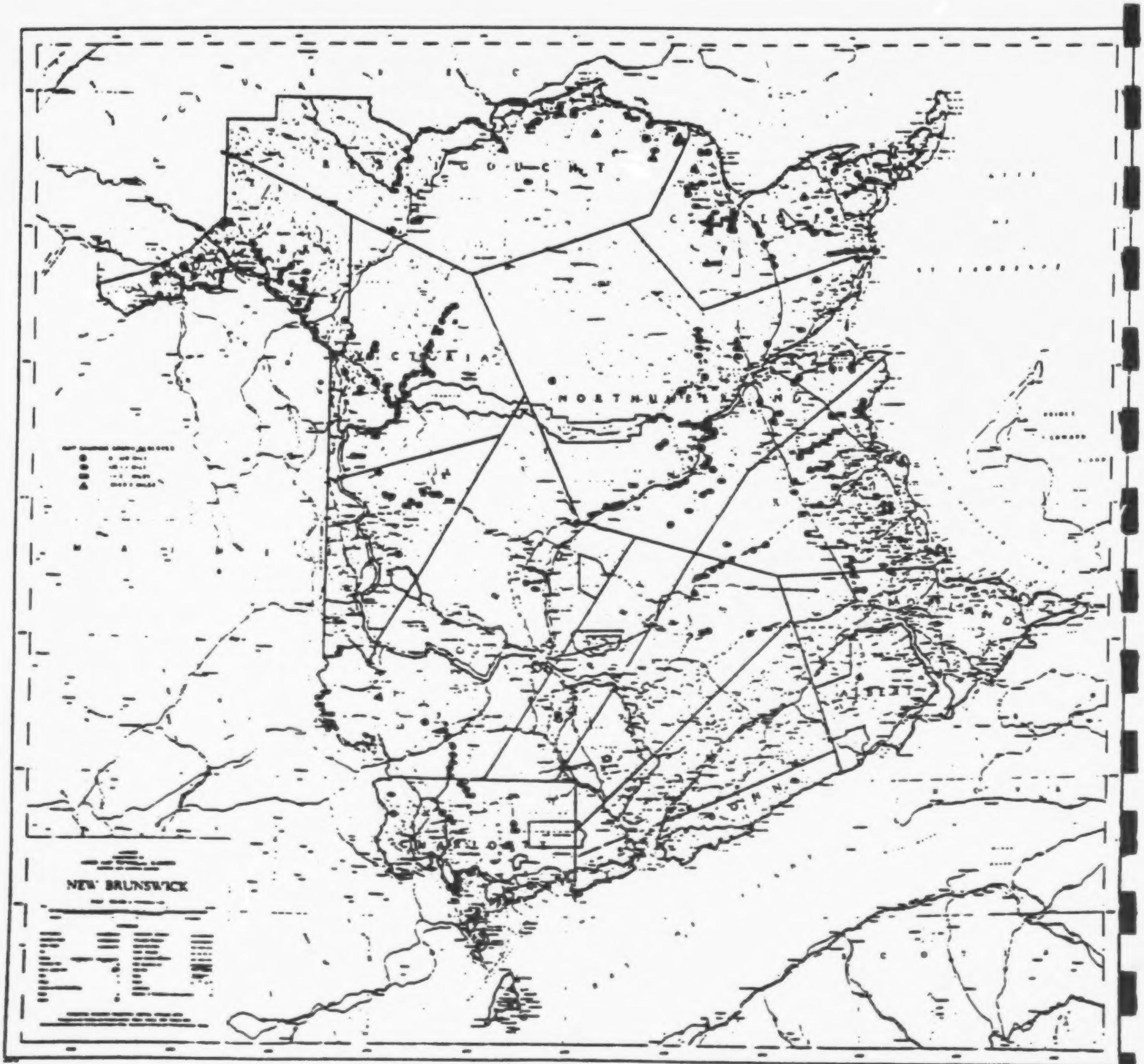
1. Water frontage is high value land and very expensive.
2. "Ribbon development" is not a desirable land use along rivers or lakes. Some constraint is needed for future water resource protection. All Crown owned waterfront becomes a critical area to future citizens.

What can be done with reserves?

- First is the need to identify, on the ground and on maps, and set up an inventory.
- Each parcel should then be evaluated by D.N.R. and an evaluation team representing involved Departments - Tourism, Agriculture, Transportation, Municipal Affairs, (Planning), Fish and Wildlife, Environment, N.B.E.P.C. and Local Municipality if near-by.
- Based on evaluations the parcel could be either sold or retained - if retained:

  Placed on reserve, leased to private or commercial recreation use, used as a campground by Tourism, etc.

# CROWN WATERFRONT RESERVES


RESTIGOUCHE
GLOUCESTER
VICTORIA
NORTHUMBERLAND
WESTMORLAND
ALBERT
KINGS
SAINT JOHN
CHARLOTTE
NEW BRUNSWICK

## MAPLE SUGAR OPPORTUNITY

This letter is in direct response to a problem being exhibited on our limited Crown Land resources. It has been brought to my attention that in some areas of the Province, potential sugar bushes are being clearcut or hygraded for fuelwood and/or for pulpwood fibre. The N. B. Maple Producers Co-op has asked me to look into that problem and deal with it. Tha Maple Industry is presently at a crucial crossroads in its development and if the industry takes the initiative, which I believe it will, then there will arrive almost immediately, a shortage in economically productive sugar bushes, thereby curtailing a significant growth in the industry. A Sugar Maple Bush requires a number of criteria in order to make it potentially operationally efficient. Among these criteria are the following:

(1.) definite slope greater than 1%
(2.) preferrable south or south-east slope
(3.) minimum 4 hectare size
(4.) stand with a minimum component of sugar maple preferably in a 30-60 year age class
(5.) accessability to sap harvesting & evaporating
(6.) ideally the bush should be accessable by the public from a main road
(7.) an electrical power source nearby would be an important asset
(8.) nearness to a population base would be an asset
(9.) overriding many or all of these factors would be the expert opinion and advisability of the Regional Maple Specialist.

Certain areas of Crown Land are potentially operationally efficiently located and as such, I believe should be reserved for their potential maple sugar production. The land areas in question are not extensive and would show limited intrusion into the industrial fibre sector. The following potential acreages should realistically be placed on a reserved list as potential sugar bushes by D.N.R. field staff and then perhaps be confirmed by D.N.R. Lands Branch. These areas can then be made available to the Maple Producers of the Province by contract (lease) at rates attractive to the Department of Natural Resources.

## MAPLE SUGAR

The following potential acreages should be reserved in each of the following Regions:

| | | |
|---|---|---|
| ALBERT COUNTY | - | 500 acres |
| YORK COUNTY | - | 200 acres |
| MADAWASKA | - | 200 acres |
| CARLETON-VICTORIA | - | 100 acres |
| GLOUCESTER | - | 50 acres |
| RESTIGOUCHE | - | 75 acres |
| | | 1,075 acres* |

If these areas would be reserved by both the Regional D.N.R. Lands Branch Staff, then the Maple Industry will have sufficient breathing space in order to develop and expand their industry in the near future. I thank you on behalf of the N.B. Maple Producers Co-op and look forward to your favourable response.

Dear Mr. Young:

In your capacity as D.N.R. representative on the Land Use Task Force, I would appreciate you presenting the attached request to your committee. If I can be of further help for questioning or clarification, please contact me at 453-3711.

Yours Sincerely,

Donald F.

Donald F. O'Brien
Provincial Maple Specialist

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* This could yield a net return of $215,000 per annum.

MODEL MAPLE SUGAR OPERATION

BASED ON THE ASSUMPTION OF A "ONE" MAN OPERATION

| | | | | | |
|---|---|---|---|---|---|
| FOREST LAND NEEDED (APPROXIMATELY 100 TAPS/ACRE | | 20.0 acres | 20.0 acres | 40.0 acres | 40.0 acres |
| INVESTMENT NEEDED: | | $12,000.00 | $12,000.00 | $29,500.00 | $31,500.00 |
| EVAPORATOR | | 3,000.00 | 3,000.00 | 7,000.00 | 8,000.00 |
| SUGAR HOUSE | | 3,000.00 | 3,000.00 | 4,000.00 | 5,000.00 |
| COLLECTING EQUIPMENT | | 6,000.00 | 6,000.00 | 16,000.00 | 16,000.00 |
| POWER SOURCE | | | | 2,500.00 | 2,500.00 |
| LABOUR NEEDS (WORK DAYS) | | 60 | 90 | 80 | 120 |
| PRODUCTION (gals.) | | 150 plus | sugar,taffy,<br>cream,butter,<br>fluff,jelly | 600 | as in the<br>20.0 acres |
| GROSS REVENUE (@ $18./gals) | | 2,700 | | 10,800 | |
| (refined products plus 40%) | | | 3,780 | | 15,120 |
| EXPENSES: | INVESTMENT INTEREST AT 15% | 1,800 | 1,800 | 4,425 | 4,725 |
| | DEPRECIATION(10 years span) | 1,200 | 1,200 | 2,950 | 3,150 |
| OPERATING COST: | CAMP AND MACHINERY MAINTENANCE | 500 | 500 | 1,000 | 1,000 |
| | TRANSPORTATION(FUELWOOD & SUPERVISING | 250 | 250 | 500 | 500 |
| | CHAIN SAW | 100 | 100 | 150 | 150 |
| | | 3,850 | 3,850 | 9,025 | 9,525 |
| NET REVENUE | | -1,150 | - 70 | 1,775 | 5,595 |
| REVENUE PER DAYS WORK | | | | 22.18 | 46.62 |

Source: Department of Natural Resources.

## MODEL CHRISTMAS TREE FARM

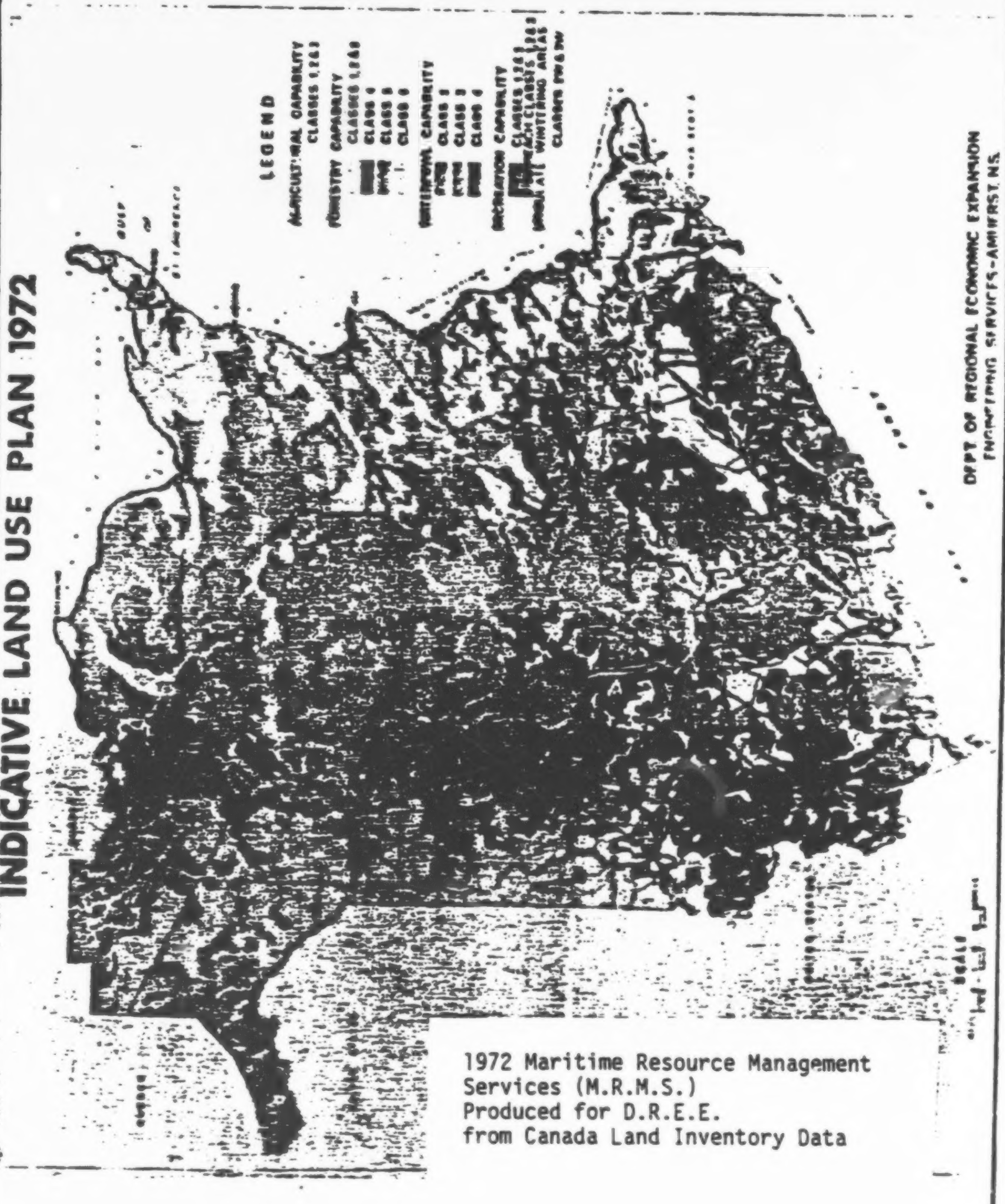
(One man operation base)

| | | "Part time" | "Full time" |
|---|---|---|---|
| Forest land needed | | 10 acres | 40 acres |
| Investment needed | | $1,400.00 | $2,500.00 |
| Equipment | (Lifespan 8 - 10 yrs.) | | |
| Labour needs | | 60 days | 230 days |
| Production | | | |
| Intensive care | 100/acre/year | 1,000 | 1,000 |
| Revenue | | | |
| Gross | $5.50 per tree | $5,500.00 | $22,000.00 |
| Net | $3.40 per tree | $3,400.00 | $13,600.00 |

TRENDS:

- Plantation of seedlings (Field planting and interplanting wildstands).
- Wreath making.
- Brush sales.
- Sales through groups.
- Transplant Beds.

Source: Dept. of Natural Resources,
Forest Extension Service.


INDICATIVE LAND USE PLAN 1972
LEGEND
AGRICULTURAL CAPABILITY
CLASSES 1,2 & 3
FORESTRY CAPABILITY
CLASSES 1,2 & 3
CLASS 4
CLASS 5
CLASS 6
WATERFOWL CAPABILITY
CLASS 1
CLASS 3
CLASS 4
RECREATION CAPABILITY
WINTERING AREAS
GULF
ST LAWRENCE
SCALE
DEPT OF REGIONAL ECONOMIC EXPANSION
ENGINEERING SERVICES-AMHERST N.S.

1972 Maritime Resource Management Services (M.R.M.S.)
Produced for D.R.E.E.
from Canada Land Inventory Data

# 'PRODUCTIVE LAND IDENTIFICATION PROGRAMME'

The current Farm Land Identification Programme provides for farmland to be assessed at realistic values and taxed at residential rates of $1.50% but allows for deferment of the tax due, so long as the land remains as farmland.

The Task Force sees much merit in extending this principle to all sizable portions of freehold 'resource land', in particular to that now classified as Freehold Timberland and Farm Woodlots under the Assessment Act.

These are currently taxed at less than 1/500 of their value, or about 20 cents per annum for every $100.00 value. Yet this land naturally produces wood to a current average delivered value of $13.20 per annum per acre or almost 50 times as much as the annual tax. With intensive management it could be expected to produce wood worth as much as $40 to $50 per annum at today's prices, although markets would have to be found for the increased production.

Nor does the tax come anywhere close to covering the cost of Government Services to forest land which can be variously calculated but are at least $10 per annum. (This would include only the cost of forest extension and a proportion of Department of Transportation's operating and Capital budget after deduction of direct revenue.)

The tax collected now from Freehold Forest Land amounts to about $2.3 million which is minute in proportion to the value of the land, small in proportion to the natural revenue potential of the land, does not remotely approach the approximately $86 million required to service the land; and is far less than that assessed against residential and farmland.

At the risk of losing this small amount of revenue, the Government could create a substantial incentive for improved use of this land by treating it as either Non-residential or Residential land and taxing it accordingly but allowing rebate of taxes against evidence of productive use.

Large freehold land seems to fall most readily into the Non-residential category, but small freehold blocks might be assessed as Residential.

The effect of this would be to raise the annual tax on 100 acres of large freehold timberland from $36 to about $340 per annum. The desire to have this rolled back would provide a more realistic incentive to make the land produce. Hopefully the value of the increased overall provincial production would greatly exceed the $21 million of potential tax revenue that would be deferred under a fully successful programme.

There are many variations that could be worked on this theme and they are recommended for consideration. A summary of some of the figures is given on the following page.

This is only one example of an approach towards encouraging increased productivity. There are others, such as finding ways to make work in the woodlot eligible as employment under the U.I.C. programme. Further work is required on these as the demand arises.

## FREEHOLD FOREST LAND

### Some Averaged Values
### Total 8,045,400 Acres

| | | Acre | Total $(million) |
|---|---|---|---|
| Land value (Statistics Canada) | (1.) | $292. | 2,370.0 |
| Alternate say | | $150. | 1,206.8 |
| Production value (D.N.R.) 1981 | (2.) | $ 13.67 p.a. | 110.0 p.a. |
| Stumpage value @ $10 cord | | $ 2.49 p.a. | 20.0 p.a. |
| Cost of Government Services (Net). | (3.) | $ 10.60 p.a. | 85.8 p.a. |
| Property Tax Revenue to Government | (4.) | $ 0.29 p.a. | 2.3 p.a. |

(Less than 1/500 of the land value)

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NOTES:

(1.) This figure is understood to be the average of rural land sales and so would be weighted by farmland and farm woodlots. A figure of about $150 an acre may be more accurate for larger parcels of forest land.

(2.) This is derived from D.N.R.'s figures for Primary Forest Production (App. J. & F24) and the 1981 mean millyard price of $55 cord for mixed pulpwood.

(3.) This is primarily Department of Transportation's Operation and Capital Budget, less Revenue, proportioned over all the Province plus Forestry Extension budget.

(4.) Based on current Assessment Act.

## PRODUCTIVITY INCENTIVE

### AN EXAMPLE

Assess Large Freehold Forest Land as 'Non-Resident' and Small freehold as 'Resident', but allow for rebate of tax from managed productive land.

Example - 100 acres large freehold land.

| | |
|---|---|
| Present assessed value | $2428 |
| Present tax | $ 36 per annum |
| Present production value | $1320 per annum |
| Potential managed production capability | $4000 per annum |

| | |
|---|---|
| Reassessed value of (say) $150 acre (Average price for N.B. rural land in 1981 was $292 - Statistics Canada) | $15,000 |
| Non-resident tax assessment @ $2.25% = | $337.50 per annum |

---

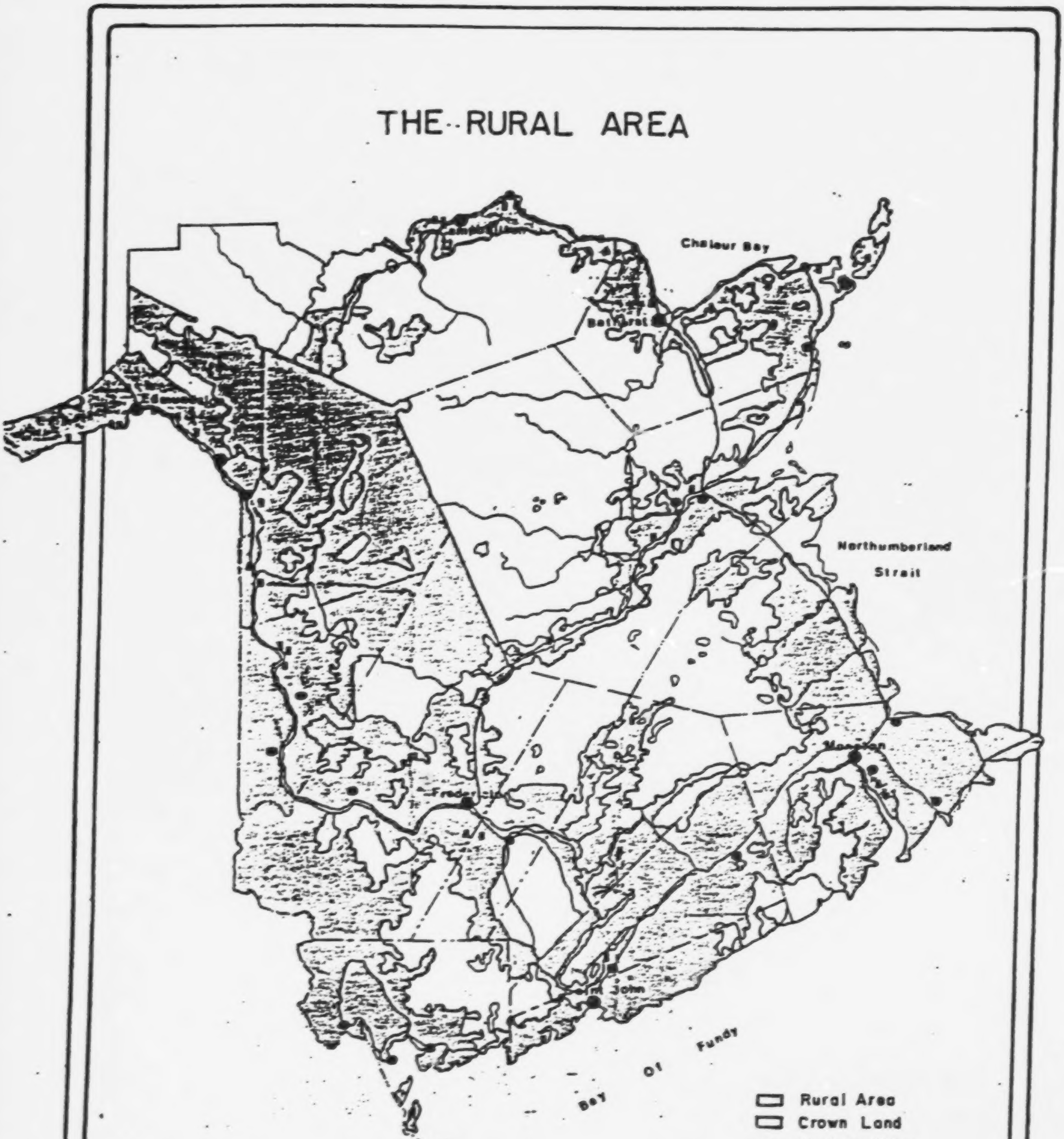
NOTE:

If productivity does not increase and no rebates are given, total tax revenue will be:

| | |
|---|---|
| Large freehold (@ $150 acre @ $2.25%) = | $ 9,472,275 |
| Small freehold (@ $150 acre @ $1.50%) = | $11,787,300 |
| | $21,259,575 |

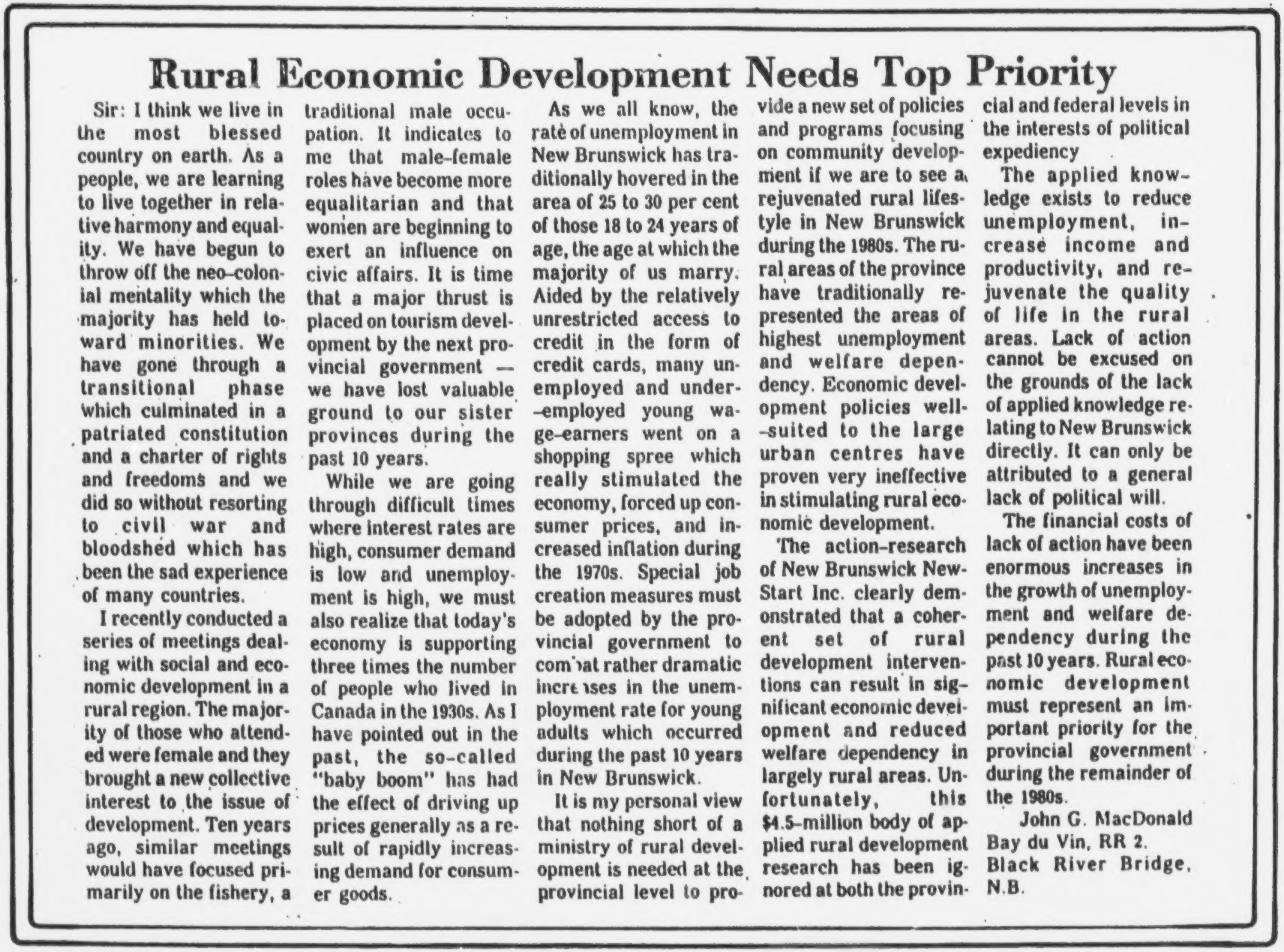
If the programme is fully successful, the present tax revenue of $2.3 million will be lost.

Figure 2



THE RURAL AREA

Campbellton
Chaleur Bay
Bathurst
Edmundston
Northumberland
Strait
Moncton
Fredericton
Saint John
Bay Of Fundy
Rural Area
Crown Land
●. Municipalities
▪ Villages



# Rural Economic Development Needs Top Priority

Sir: I think we live in the most blessed country on earth. As a people, we are learning to live together in relative harmony and equality. We have begun to throw off the neo-colonial mentality which the majority has held toward minorities. We have gone through a transitional phase which culminated in a patriated constitution and a charter of rights and freedoms and we did so without resorting to civil war and bloodshed which has been the sad experience of many countries.

I recently conducted a series of meetings dealing with social and economic development in a rural region. The majority of those who attended were female and they brought a new collective interest to the issue of development. Ten years ago, similar meetings would have focused primarily on the fishery, a traditional male occupation. It indicates to me that male-female roles have become more equalitarian and that women are beginning to exert an influence on civic affairs. It is time that a major thrust is placed on tourism development by the next provincial government — we have lost valuable ground to our sister provinces during the past 10 years.

While we are going through difficult times where interest rates are high, consumer demand is low and unemployment is high, we must also realize that today's economy is supporting three times the number of people who lived in Canada in the 1930s. As I have pointed out in the past, the so-called "baby boom" has had the effect of driving up prices generally as a result of rapidly increasing demand for consumer goods.

As we all know, the rate of unemployment in New Brunswick has traditionally hovered in the area of 25 to 30 per cent of those 18 to 24 years of age, the age at which the majority of us marry. Aided by the relatively unrestricted access to credit in the form of credit cards, many unemployed and under-employed young wage-earners went on a shopping spree which really stimulated the economy, forced up consumer prices, and increased inflation during the 1970s. Special job creation measures must be adopted by the provincial government to combat rather dramatic increases in the unemployment rate for young adults which occurred during the past 10 years in New Brunswick.

It is my personal view that nothing short of a ministry of rural development is needed at the provincial level to provide a new set of policies and programs focusing on community development if we are to see a rejuvenated rural lifestyle in New Brunswick during the 1980s. The rural areas of the province have traditionally represented the areas of highest unemployment and welfare dependency. Economic development policies well-suited to the large urban centres have proven very ineffective in stimulating rural economic development.

The action-research of New Brunswick NewStart Inc. clearly demonstrated that a coherent set of rural development interventions can result in significant economic development and reduced welfare dependency in largely rural areas. Unfortunately, this $4.5-million body of applied rural development research has been ignored at both the provincial and federal levels in the interests of political expediency

The applied knowledge exists to reduce unemployment, increase income and productivity, and rejuvenate the quality of life in the rural areas. Lack of action cannot be excused on the grounds of the lack of applied knowledge relating to New Brunswick directly. It can only be attributed to a general lack of political will.

The financial costs of lack of action have been enormous increases in the growth of unemployment and welfare dependency during the past 10 years. Rural economic development must represent an important priority for the provincial government during the remainder of the 1980s.

John G. MacDonald
Bay du Vin, RR 2.
Black River Bridge,
N.B.

- Letter to the Editor
The Daily Gleaner
Monday September 27, 1982

# APPENDIX N

# APPENDIX N

## ECONOMIC RENT FOR PUBLIC LANDS

Page

1. Economic Approach to Lease Rentals on Crown Land N 1
2. Market Value N 2
3. Calculation Sample N 4

Appendix N.

## ECONOMIC RENT FOR PUBLIC LANDS

The Task Force studied a Department of Natural Resources document entitled "Economic Rent". This report formalizes the process of establishing Rent on land leased for a variety of purposes.

The Task Force notes as follows:

1. Rents are based on Market value making the leasing of Crown land competitive with freehold(previously the rents were about 1/10 th of the Economic rent and unfair to private land development)
2. Land use is shown as an economic use and any Social Factor for example, a lease to a charitable organization can be identified as a social program by showing full economic rent, the rent charged and the difference between the two then becomes the Provincial grant to the charitable organization.
3. The "Process" is a usefull tool for land Managers in value and demand relationships when making land decisions

Attached is a brief summary of the report:

Economic Approach to Lease Rentals Under the Crown Lands & Forest Act. DNR, Crown Lands Branch, August 26, 1981.

### Economic Rent

Economic Rent is the rental income that real estate can command in the open market at any given time for its highest and best use. This is also referred to as market rent. There are two approaches for determining economic rent.

a) rental is based on identifying comparable lands having the same use and being rented in the open market, or;

b) rental is based on the rate of return expected on the market value of the land.

A) The estimated rental is based on comparable lands having the same highest and best use as the subject lands and being rented in the open market. Comparable lands being rented are located on freehold and are compared with the subject land lease. Adjustments are then made to reflect the difference

Source: D.N.R. Lands Branch

of value due to location, size, topography, etc.

advantages: 1. rental can be quickly estimated from comparable properties on the open market.

disadvantages:
1. the difficulty of finding comparable properties rented on the open market.
2. if comparable properties are found, how comparable are the properties
3. several adjustments are frequently required to reflect the differences of values between the subject and the comparables.
4. the rental set by the lessor does not necessarily reflect full market conditions as the lessor may be ignorant of the true market value or the highest and best use of his property.

B) The Market Value of the property is determined by ascertaining the prices obtained for the sale of comparable properties on the open market and making appropriate adjustments to reflect differences between the properties. In this determination of Market Value, the highest and best use of the property is taken into account. It is also necessary in this approach to establish a rate of return which is based on the personal fixed term (5 years) bank deposit rate or, in some instances, bond rate.

advantages:
1. sales of comparable properties are normally easily available in the market.
2. with good comparable sales, few adjustments are necessary to arrive at an estimate of value for the subject property.
3. the economic rate of return is easily available in the market place.
4. a well recognized approach by most government jurisdictions and supported by Court decisions.

disadvantages:
1. difficulty locating comparable sales in some cases, particularly for rural areas.
2. some adjustments may be required between the comparable and the subject.

## Best Economic Rent Approach for Crown Lease Rentals:

After due consideration of both the rural nature of Crown Lands subject to lease, and the advantages and disadvantages associated with both approaches, it was decided that the latter approach, i.e. the Market Value/Rate of Return Approach was the most reliable method for establishing economic rent for Crown land.

## Economic Rent Approach to be Phased in Over 5 Years

Phase-in Period be initiated for all rental increases of over 100 dollars.

The majority of rental increases are over 100 dollars and a phase-in would affect 55% of leases currently being negotiated. The phase-in period would be a maximum of 5 years at which time all rentals will be reevaluated as a condition of the lease.

Phase in formula

$$R=\frac{(N-S)}{5} \times Y(+S)$$

R= reduced rental
N= New rental established under the New Act
S= old rental
Y= the number of years after the effective date of this formula where Y=1 for the first year (April, 1982 to April 1983), etc.

## Sample Calculation

| Year after April 1/82 | New Rental | Old Rental | Phase-in Calculation | Annual Rental |
|---|---|---|---|---|
| 1 | $825 | $100 | $\frac{(825-100)}{5} \times 1+100$ | $245 |
| 2 | $825 | $100 | $\frac{(825-100)}{5} \times 2+100$ | $390 |
| 3 | $825 | $100 | $\frac{(825-100)}{5} \times 3+100$ | $535 |
| 4 | $825 | $100 | $\frac{(825-100)}{5} \times 4+100$ | $680 |
| 5 | $825 | $100 | - - - - - - - - | $825 |

## Current and Economic Rental Revenues Compared

| | TOTAL | | |
|---|---|---|---|
| LEASE CATEGORY | AREA (ACRES) | CURRENT REVENUE | ECONOMIC RENTAL |
| Agriculture | 235.00 | $ 591.50 | $ 3,626.00 |
| Commercial | 295.85 | $1,404.00 | $18,321.00 |
| Communications | 143.59 | $ 541.00 | $ 3,820.00 |
| Community Services | 361.53 | $ 521.00 | $ 6,124.08 |
| Industrial | 1,372.33 | $ 800.00 | $ 7,970.86 |
| Institution | 205.24 | $ 336.00 | $ 7,630.00 |
| Recreation | 76.61 | $1,452.00 | $ 9,746.00 |
| Residential | 4.00 | $ 80.00 | $ 610.00 |
| Transportation | 2.00 | $ 40.00 | $ 162.00 |
| Utility/Electric | 321.95 | $ 373.00 | $ 846.00 |
| TOTALS | 3,018.10 | $6,338.50 | $58,855.94 |

# APPENDIX O

# APPENDIX O

## LAND USE POLICY IN OTHER CANADIAN JURISDICTIONS

Page

1. Land Use Policy in Other Jurisdictions 0-1

    British Columbia

    Alberta

    Saskatchewan

    Manitoba

    Ontario

    Quebec

    Nova Scotia

    Prince Edward Island

    Newfoundland

    Federal Government

2. Extracts from Manitoba Land Use Policy 0-2

3. Federal Land Use Policy 0-3

# LAND USE POLICY IN OTHER CANADIAN JURISDICTIONS

Many Canadian Provinces have either adopted Provincial land Use Policies or are in the midst of elaborating and developing ones. The first Provinces to formaly adopt a Provincial Land Use Policy has been the Province of Manitoba. (Excerpts from this policy are included in Schedule A at the end of this section. Since that time, many other Canadian Jurisdictions have been interested in adopting some form of a comprehensive land use policy. The Federal Government has recently adopted a policy on land use to guide federal policies and programes that affect land use and also to guide the management of federal lands. Of particular interest, the federal policy recognizes that provincial governments have legislative jurisdictions over the general regulation and control of land within their boundaries (A copy of the Federal Policy is included at the end of this report as Schedule B).

## British Columbia:

A Bill on land use policy (Bill no. 9) has been prepared to comprehensively establish a policy for all land related matters in B.C.. The policy has been presented to the provincial Cabinet for consideration.

## Alberta:

Alberta is not working on a land use policy per se, the Resource Evaluation and Planning Division is instituting a process of integrated Resource planning, with linkages from local level to top provincial decision-making. This involves many of the aspects of a policy such as Principles and Goals, but is primarily a process, based on three decision making levels: provincial, policies/ programs, regional plans, sub-regional plans and local plans. These are coordinated and integrated through a series of councils, committees and teams. This process is being gradually implemented, without massive shifts or changes. It should be noted, however, that the regional plans for the Province will be completed in the near future.

## Saskatchewan:

Saskatchewan has been involved in land use policy development for several years. They have been using a public consultation process to develop the policies. The policy is designed as an umbrella policy to cover all aspects of land use in the Province. A strong grass roots approach was used in the preparation of the policy and the policyis still under review.

Manitoba:

Manitoba has now had a land use policy in place for almost two years, and is finding implementation gradually becoming accepted. Excerpts of the policy are attached at the end of this section.

Ontario:

Ontario is in the process of thorough review of the Planning Act. The Land Use Committee steering the revision is agreed that an umbrella land use policy would be a logical next step. Research and preparation is now underway to test the need for such a policy

Quebec:

Bill 90 with respect to the agricultural land zone has been in place for some time.

Nova Scotia:

A land use policy committee has been working on a review of the Nova Scotia Land Planning Act. It makes recommendations respecting a process for land use decision making. In addition, the Review Committee encourages Nova Scotia to develop a provincial land use policy.

Prince Edward Island:

While no land use policy per se is being contemplated, an integrated process based on comprehensive land legislation and practice is in place and being developed. The Province recently adopted a "Lands Protection Act" which represents a commitment toward preserving the rural community of the island. The Act prevents persons from holding an aggregate amount of land in excess of 1,000 acres and corporations an amount in excess of 3,000 acres.

Newfoundland:

Newfoundland is in the midst of preparing a new public lands act.

Federal Government:

Has recently adopted a land use policy a copy of which is at the end of this section.

SCHEDULE A Extracts from Manitoba Land Use Policies

# PROVINCIAL LAND USE POLICIES

## GENERAL SCOPE AND APPLICATION

The Provincial Land Use Policies apply to all land in Manitoba with the exception of land within the jurisdiction of the City of Winnipeg.

The Policies will serve as a guide in the approval of Basic Planning Statements and Development Plans. Also, in municipalities where there are no such plans approved for the area, the Policies will be used in the review of subdivision applications. The Policies are intended to provide the overall framework necessary for the preparation and assessment of local plans, by setting out some general guidance and direction in the management of the Province's land resource.

By their very nature, the Policies must be fairly broad since they must serve to guide a wide range of uses in many differing areas throughout Manitoba. They do not take into account unique local situations and, therefore, must be applied with some amount of discretion and common sense, where it can be shown that the intent of the Policies can still be achieved, or where they are not appropriate.

Many of the Policies contain detailed criteria and specifications with respect to their application. While these units of measurement are definitive in and of themselves, it is not intended that they be interpreted as mandatory regulations or rigid formulas, but rather that they may be varied in unique situations so as to ensure that policy application can be as responsive as possible to local conditions.

These Policies have been designed to further the overall intent of The Planning Act as a process of local planning and decision making guided by provincial policy. Local circumstances can best be understood and interpreted through the preparation of more detailed plans for a given area since municipalities often have unique characteristics which demand a different approach. Through the process of planning at the local or district level, the Policies can be refined and adapted to suit the particular needs of the area. Once planning documents have been prepared by the local authority and approved by the Province, the local plans will replace this more general provincial policy document as the instrument guiding development in the area.

### POLICY #1

**AREAS SHOULD BE PRESERVED FOR A FULL RANGE OF AGRICULTURAL ACTIVITIES WHERE AGRICULTURE IS IN THE DOMINANT POSITION ON PRIME AGRICULTURAL LAND AND WHERE AGRICULTURAL ACTIVITIES ARE DOMINANT ON LOWER CLASS LANDS AND IT IS DESIRABLE TO PROTECT SUCH ACTIVITIES.**

#### A. Policy Objectives

The general objectives of this Policy are to protect the present and future agricultural industry, to protect land for present and future food production, and to foster growth and development in the agricultural industry.

The more specific objectives of the Policy are:

(a) To encourage the retention of prime agricultural lands for crop production;
(b) To protect those lower class lands which can be used for many different types of mixed agricultural enterprises, including crop production, forage production, grazing and livestock operations;
(c) To protect farmland and agricultural activities from encroachment by future non-farm residences where agriculture is viable and where the land base is able to facilitate agricultural production;
(d) To protect livestock confinement operations from possible encroachment and potential conflicts.

## POLICY #2

**AREAS SHOULD BE PRESERVED FOR LIMITED AGRICULTURAL USE, WHERE BECAUSE OF THE MIXTURE OF THE LAND USES A FULL RANGE OF AGRICULTURE ACTIVITIES MAY NO LONGER BE POSSIBLE.**

### A. Policy Objectives

The intent of this Policy is to maintain agriculture and facilitate agricultural development in those areas where conflicting land uses may require some limitation of the kind or intensity of agricultural development. Any development, including agriculture, should be approved or conditionally approved only if it will not conflict with existing land use.

## POLICY #3

**LANDS MAY BE DESIGNATED FOR RURAL RESIDENTIAL DEVELOPMENT PROVIDED THAT THE SITING AND DESIGN OF SUCH DEVELOPMENT REFLECTS ITS ROLE AS AN ALTERNATIVE TO THE URBAN LIFE-STYLE AND NOT AS AN EVOLUTIONARY STEP TOWARDS AN URBAN ENVIRONMENT. IN ADDITION, THE DEVELOPMENT SHALL BE PLANNED TO MINIMIZE CONFLICT WITH RESOURCE-RELATED INDUSTRIES AND ACTIVITIES AND TO MINIMIZE PUBLIC SECTOR COSTS.**

### A. Policy Objectives

This Policy recognizes rural residential development as a legitimate form of land use and ensures that rural residential development takes place in a planned framework:

(a) Related to current and projected levels of demand;
(b) Safeguarding the present and future use of the Province's natural resources;
(c) Complementing the existing urban centres of the Province;
(d) Avoiding unnecessary costs to the public or to the private sector due to premature or haphazard development.

## POLICY #4

**PROPOSED URBAN LAND USES SHALL STRENGTHEN EXISTING URBAN CENTRES RATHER THAN ESTABLISH NEW COMPETING CENTRES. GROWTH OF EXISTING CENTRES:**

**(a) SHALL BE PLANNED IN SUCH A MANNER THAT WATER AND SEWER SERVICES CAN BE MADE AVAILABLE AT AN ECONOMICALLY FEASIBLE COST;**
**(b) SHALL, IF THE CENTRE IS BORDERING ON ONE SIDE OF A MAJOR HIGHWAY, BE RESTRICTED TO THE SAME SIDE OF THAT HIGHWAY, WHEREVER FEASIBLE;**
**(c) MAY NECESSITATE URBAN EXPANSION ONTO ADJOINING LANDS. IN THESE INSTANCES THE LAND REQUIREMENTS OF THE URBAN CENTRE SHALL NORMALLY HAVE PRIORITY OVER THE EXISTING USE OF THAT LAND.**

### A Policy Objectives

Manitoba has an hierarchical, reasonably well distributed system of urban service centres. Each of these centres, relative to its size, represents significant public and private investment in infrastructural facilities. This Policy indicates a commitment to existing centres and implies that the establishment of new urban centres will be discouraged.

Growth will be encouraged in existing urban centres, but this growth should be planned with an awareness of the costs of servicing new development. Urban growth should also be guided so as to minimize conflict with the primary provincial roadways.

## POLICY #5

### DEVELOPMENT PLANS SHALL IDENTIFY AREAS OF HIGH RECREATION CAPABILITY AND EXISTING RECREATION DEVELOPMENTS OF REGIONAL AND PROVINCIAL SIGNIFICANCE.

**A. Policy Objectives**

The purpose of this Policy is to encourage the safeguarding of scarce recreational and scenic resources. Suitable sites are becoming particularly scarce within the day-trip zones of large urban centres where the need for open space for leisure time pursuits is the greatest. Development plans are to anticipate future recreational needs through proper recognition and zoning of high quality recreational lands. In addition to offering needed opportunities for recreative experiences, such areas can add to the general environmental quality by providing visual buffers and wildlife habitat and by pre-empting undesirable uses of marginal land or land with high amenity potential.

## POLICY #6

### RECREATIONAL DEVELOPMENTS SHALL BE PERMITTED ONLY TO THE CARRYING CAPACITY OF THE RESOURCE BEING UTILIZED. SUCH DEVELOPMENTS SHOULD BE PLANNED IN HARMONY WITH THE NATURAL ENVIRONMENT. PUBLIC ACCESS TO AND USE OF KEY RESOURCE AREAS SHALL BE PRESERVED.

**A. Policy Objectives**

It is the intention of this Policy to protect existing and future recreation areas against overuse and degradation of recreational resources, particularly where there are a limited number of sites suitable for the creative use of leisure time in close proximity to large urban centres, or at or near significant provincial resource areas. Overdevelopment of these recreational areas results in damage to the physical resource and/or a decline in the quality of the intended recreational experience.

## POLICY #7

### WATERWAYS, WATER BODIES AND SHORELANDS HAVING ENVIRONMENTAL, RECREATIONAL, OR OTHER GENERAL SIGNIFICANCE TO THE PUBLIC SHOULD BE AFFORDED PROTECTION.

**A. Policy Objectives**

The purpose of this Policy is to recognize the importance of waterways, water bodies and shorelands to the public and to protect the integrity and usefulness of these finite resources. Key shorelands should be maintained and managed to meet recreation, erosion protection and water table retention requirements and to ensure the viability of critical environments for local flora and fauna. In addition to these specific reasons, it is anticipated that certain shorelands will be designated for protection solely to ensure the right of the public to fully utilize the province's major waterways and water bodies.

## POLICY #8

**RECREATION AND RESOURCE AREAS SHALL BE AFFORDED PROTECTION FROM ADJACENT USES THAT WOULD DEGRADE OR ENDANGER THEIR PRIMARY FUNCTION.**

### A. Policy Objectives

The character of land use adjacent to provincial recreation and resource areas is a major factor affecting the continued viability of the primary function of these reserves. By their very nature, these areas are quite vulnerable to all types of environmental disturbances (water pollution, noise pollution, water table drawn down, habitat destruction, etc.). The purpose of this Policy is to ensure that these significant areas are not adversely affected by adjacent land uses.

## POLICY #9

**AREAS CRITICAL TO THE EXISTENCE OF RARE OR ENDANGERED PLANTS OR ANIMALS, SIGNIFICANT NATURAL FEATURES, AND CULTURAL AND HISTORIC SITES OF THE REGION SHALL BE IDENTIFIED AND SHOULD BE DESIGNATED AND PRESERVED.**

### A. Policy Objectives

The purpose of this Policy is to:

(a) Assist in the maintenance of rare or endangered plants and animals by ensuring that areas critical to their existence are protected.
(b) Protect significant natural features which characterize a region and are in danger of being eliminated or reduced to such an extent as to become atypical.
(c) Commemorate, protect and reconstruct significant themes and events in history by preserving prehistoric and cultural sites and artifacts in order to increase an understanding of the contributions to Manitoba's historic development made by significant groups and individuals.
(d) Encourage awareness and continued use of Manitoban buildings which illustrate unique or interesting architectural form and design or that are connected with historically significant people, groups, places, events or themes in Manitoba's development.

## POLICY #10

**AREAS SHALL BE IDENTIFIED, DESIGNATED AND RESERVED FOR RENEWABLE RESOURCE PRODUCTION, UTILIZATION AND PRESERVATION BY OUTLINING:**

**(a) AREAS OF EXISTING PRIME WILDLIFE HABITAT;**
**(b) EXISTING EXCEPTIONAL FORESTRY VALUE AREAS;**
**(c) AREAS OF EXISTING PRIME FISH HABITATS;**
**(d) OTHER AREAS OF RENEWABLE RESOURCE SIGNIFICANCE.**

### A. Policy Objectives

1. The purpose of this Policy is to enhance the quality of life by:

(a) Maintaining and promoting economic opportunities associated with renewable resource utilization through the protection of renewable resource areas (e.g. commercial fishing).
(b) Maintaining and promoting ecological diversity by protecting wildlife and fish habitats and important forestry areas.
(c) Maintaining and protecting wildlife and fish populations through habitat protection for use by Manitobans.

(d) Maintaining the aesthetic qualities of the rural landscape.
(e) Maintaining existing natural erosion protection and preventing southern Manitoba from becoming a monoculture of bald prairie.
(f) Ensuring that provincial money spent on stocking water will provide a higher degree of benefit.

2. It is important to realize that the lands protected by this Policy are also important for recreation, shoreline maintenance and erosion control and that this overlap with other policies underlines the importance of the remaining wooded areas.

## POLICY #11

### LANDS SUBJECT TO HAZARDS SUCH AS FLOODING OR EROSION SHOULD BE RETAINED FOR OPEN SPACE OR AGRICULTURAL CROPPING. MORE INTENSIVE DEVELOPMENT SHALL ONLY BE CONSIDERED WHERE THE HAZARD CAN BE ELIMINATED OR WHERE THE USE WOULD BE COMPATIBLE WITH THE RISK.

**A. Policy Objectives**

1. Development within hazard areas can lead to acceleration of environmental damage, interference with natural processes, public expenditures for remedial works or assistance, waste of resources, and personal loss and hardship. To mitigate against these potential expenses and damages, the objectives of the Policy, through judicious land use, are:
(a) To minimize personal hardship and inconvenience, adverse effects on public health, and loss of life and safety.
(b) To minimize property damage and public expenditures for relief or protection.
(c) To restrict activities which would accelerate or promote damages arising from causes such as erosion or bank instability.
(d) To maintain the natural capability of streams to convey flood flows.
(e) To restrict activities which could negate the benefits from existing flood control works.

## POLICY #12

### NEW DEVELOPMENT SHOULD BE RESTRICTED IN THE VICINITY OF PROVINCIAL HIGHWAYS SO AS TO AVOID ANY INTERFERENCE WITH THE MAIN FUNCTION OF THIS REGIONAL TRANSPORTATION NETWORK.

**A. Policy Objectives**

The primary role of the provincial highway system is to move traffic over relatively long distances with maximum safety and minimal interruption. The consequences of allowing adjacent development to interfere with this function are to increase the degree of hazard and amount of delay for motorists, and to accelerate the need for costly highway improvements. The objectives of this Policy are therefore as follows:

1. To maintain a high level of service and safety on the Province's highways.
2. To prevent premature obsolescence of existing facilities, and thus protect the provincial investment in highways already in place.
3. To minimize disruption to local development in the future, and reduce the cost to the Province for land acquisition when highway upgrading is required.

The purpose of this Policy is to ensure firstly, that the more important provincial highways located outside of built-up areas are protected within a corridor wide enough to safeguard both traffic operations and options for roadway expansion in the future. It is not being advocated that such highways be enclosed in a "glass case" and shut off from development altogether. Rather, the Policy is aimed at keeping only certain types of land use far enough back from major provincial highways in rural areas so as to avoid serious conflict, now and later.

On the other hand, this Policy recognizes that it may be impractical to exclude certain activities next to mainline highways where considerable fragmentation of land has already occurred. However, in these areas it is still considered necessary to establish some basic planning criteria for minimizing friction between the highway facility and adjoining development. It is intended that such criteria also be applied to development that may be planned in the vicinity of any other provincial highway not defined as "major" under this Policy.

## POLICY #13

## ECONOMICALLY VALUABLE AGGREGATE AND QUARRY MINERAL DEPOSITS SHOULD BE PROTECTED FROM SURFACE LAND USES THAT WOULD INTERFERE WITH THEIR ONGOING AND FUTURE EXPLOITATION.

### A. Policy Objectives

The objectives of this Policy are:

(a) To protect aggregate and quarry mineral resources for future construction and development in the Province.

(b) To ensure that materials are available to support local and provincial construction needs and industrial minerals production at a reasonable cost.

(c) To ensure that pit and quarry operations are reasonably compatible with adjacent land uses.

(d) To integrate aggregate and quarry mineral extraction into the overall land use planning process by allocating areas specifically for extraction and by assuming that as the economic climate changes so areas allocated to resource extraction will also change.

(e) To pursue sequential land use practices such that on a known deposit (i) a non-conflicting land use is applied to the surface of the deposit prior to mineral extraction, and (ii) the land is returned to a practical and compatible use once extraction has ceased.

SCHEDULE B Federal Policy on Land Use

# Federal Policy on Land Use

The purpose of this publication is to outline the Federal Policy on Land Use: A policy to guide federal policies and programs as they affect land use and to guide the management of federal lands.

The federal government recognizes that the wise use and sound management of the nation's land resources are essential to the attainment of many of the nation's goals. The provincial governments have legislative jurisdiction over the general regulation and control of land within their boundaries and the federal government has no intention of intruding in the area of provincial jurisdiction with respect to land. The federal government has legislative jurisdiction over the general regulation and control of large areas of land in theTerritories and over some land, mainly federally owned, in the provinces. Furthermore, federal government policies and programs markedly affect the allocation, use and management of both private and public lands.

Land is the basis of national sovereignty, a primary factor in production of food and fibre, and its use a determinant of the quality of life for present and future generations. Sound land use is fundamental to achieving the political, social and economic goals of a society. Land provides food, fibre, minerals, fuels, shelter, water and oxygen, and is an essential element in the control of pollution and the maintenance of productive ecosystems. Consequently, the way in which land is used will shape the way in which a society functions.

In Canada, the nature, extent and capability of the land resource vary widely from region to region. In all instances, however, the high quality land base for production is limited, thus imposing a need to use the land wisely in order to obtain maximum sustained benefits. The inter-regional exchange of commodities derived from land is a significant factor in the national economy and achievement of national goals.

Current land issues relevant to Canadian society include the loss of high quality agricultural land; the increased need for industrial and residential land and its high cost; the concerns over location of transportation and energy facilities; access for mineral exploration and development; the settlement of native claims; the preservation of unique habitats for wildlife; and preservation of land of recreational, historical, cultural or aesthetic importance. The increased demands for such land and the resulting land-use conflicts make it imperative that rational land-use decisions are made in order to meet Canada's present and future needs. To this end it is essential that effective means for assessing, allocating and managing Canada's limited land resources are developed.

This document enunciates a policy goal with accompanying principles, policy statements and guidelines by which the federal government will assess, develop and adapt its programs and policies to ensure a positive contribution to the wise use of Canada's land resources and thereby contribute to the achievement of Canada's goals.

## The Goal

To ensure that federal policies and programs and the management of federal lands contribute to the wise use of Canada's land resources.

## Guiding Principles

The federal government will pursue this goal by applying policy statements and land-use guidelines while observing these principles:

- A widely understood, comprehensive and current appreciation of land, its characteristics and use is fundamental to sound land-use decisions by Canadians and their governments.
- The free exercise of a) private rights and obligations associated with land ownership; and b) the operation of the market as the prime allocator of privately-owned land must be preserved unless clearly demonstrated to be contrary to the public interest.
- The provinces have legislative jurisdiction over the general regulation and control of land use within their boundaries, with the exception of federal lands.
- Governments must be accountable for the current impact and long-term effects of their land policies and programs.
- Between governments and within any government, harmony of policies and programs that affect land is fundamental to dealing with land-use problems.
- Land-use policies, while recognizing biological and physical constraints, at the same time must reflect changing economic, technological and environmental conditions, and public attitudes.

## Policy Statements

1. **The federal government will pursue the achievement of the policy goal through a cooperative federal/provincial approach, and will support those provincial land-use objectives, policies and programs that it views to be operating in the national interest.**

2. **The federal government will acquire and manage lands necessary for those activities for which it is responsible, so as to combine efficient provision of federal government services with the achievement of broader social, economic and environmental objectives.**

   The Treasury Board Advisory Committee on Federal Land Management will consider 1) the Policy Statements and 2) the Guidelines in this document to develop policies and guidelines in support of the federal land management policy. Federal departments and agencies (listed in schedules A, B and C of the *Financial Administration Act*) will ensure the sound planning and safe development of lands for which they are responsible by ensuring that the Treasury Board Advisory Committee on Federal Land Management reviews all plans for federal facilities such as:

   - airports
   - canals
   - ports and harbours
   - parks and wildlife areas
   - small craft harbours
   - community pastures
   - defence and public works

   on all lands owned or to be acquired by the federal government.

   Ministers will provide these Guidelines to federal Schedule D Crown Corporations to guide their land-use decisions.

3. **The federal government will review its policies and programs in order to identify where and how its activities influence the use of private and public land and the evolution of land-use patterns.**

   The responsibility to conduct such reviews rests with individual departments, with guidance as required from the Interdepartmental Committee on Land.

4. **The federal government will ensure that all significant land-related projects initiated by the federal government, for which federal funds are provided, or for which federal property is required, are subject to the Federal Environmental Assessment and Review Process or a provincial equivalent so that potential environmental and land-use ill effects can be identified and mitigated.**

5. **The federal government will identify and, as appropriate, protect through designation or acquisition, lands of particular value to the nation because of historical, cultural, recreational, aesthetic or ecological importance.**

   Programs that deal specifically with these lands are being carried out within the Department of Indian and Northern Affairs and the Department of the Environment.

   Representative samples of Canada's natural landscapes, seascapes and ecosystems are acquired and maintained through the *National Parks Act*.

   Under the *Historical Sites and Monuments Act*, sites of historical and cultural value to the nation are preserved and, as required, acquired by the federal government.

   The *Territorial Lands Act* is used in the Territories to set aside lands of particular value such as game sanctuaries and national forests. Federal/provincial/territorial agreements under the Agreements for Recreation and Conservation Program identify and protect lands considered to be important recreational resources.

   Under the *Canadian Wildlife Act* and *Migratory Birds Convention Act*, wildlife areas and sanctuaries are designated and acquired.

6. **The federal government will provide a coordinated program of surveys and socio-economic, scientific and technical research on land capability, characteristics, tenure and use.**

   Surveys and research in the fields of:
   - geological surveys
   - topographic mapping
   - soils
   - ecological mapping
   - social, economic and environmental aspects of land use
   - identification of critical lands
   - land-use monitoring
   - forest inventories
   - water surveys
   - collection of socio-economic data relating to land use

   are key elements in the formulation of sound land-management strategies by all who influence the use of land.

7. **The federal government will provide information to the public on the land resource and its use as a primary means of achieving wise management of this resource.**

   Current and accurate information should be central to decisions made by land owners. The federal government will ensure that its departments and agencies coordinate their activities so that the required information is provided in the most effective and efficient manner.

8. **The federal government will discourage inappropriate use of hazard-prone lands such as those subject to floods, erosion, slumping, avalanches, seismic activity and other man-made or natural hazards.**

Present programs within the Department of the Environment and other departments identify and designate potential risk areas. These include programs to discourage new investment in flood risk areas under the federal/provincial Flood Damage Reduction Program, and regulations under the *Aeronautics Act* to regulate the use of land surrounding airports.

9. **The federal government will honour its obligations to native peoples with respect to the settlement of land claims and in satisfaction of outstanding treaty land entitlements. It will ensure that all lands made available in satisfaction of native land claim settlements are subject to appropriate environmental provisions.**

10. **The federal government recognizes that foreign land ownership issues are most effectively managed by the provinces.**

Parliament in 1973 delegated administrative authority to the provinces to control the ownership of land by foreigners.

11. **The federal government will apply the following land-use guidelines to federal policies, programs and activities which may affect land and to the management of its land holdings.**

## Land-Use Guidelines

**These guidelines reflect concern for the nation's land resource and will be used to guide federal policies and programs. Where possible, all government departments and agencies will apply these guidelines in the implementation of their policies, programs and activities. The guidelines will be reviewed periodically and may be revised in the light of changing socio-economic and environmental conditions.**

A. **The impact of policies and programs on urban land will be considered. Appropriate action will be taken to support urban land use which leads to economically efficient urban areas, and a high quality physical and social environment for urban residents.**

B. **The impact of policies and programs on land with high agricultural capacity will be considered. Appropriate action will be taken to minimize the conversion of such lands to uses incompatible with long-term food production.**

C. **The impact of policies and programs on land with high forestry capacity will be considered. Appropriate action will be taken to ensure the maintenance of such lands for sustained fibre production.**

D. **The impact of policies and programs on the use and development of lands with potential for production of non-renewable resources such as minerals, hydrocarbons and aggregates will be considered. Appropriate action will be taken to ensure access and, where required, rehabilitation.**

E. **The impact of policies and programs on land required for transportation and communication services will be considered. Appropriate action will be taken to help ensure that it will be available for future requirements.**

F. The impact of policies and programs on watersheds, aquifers, recharge and storage areas, and other lands critical to the quality and quantity of the nation's water supply will be considered. Appropriate action will be taken to ensure their protection.

G. The impact of policies and programs on lands which are of particular value because of historical, cultural, recreational, aesthetic or ecological importance will be considered and appropriate action will be taken to preserve or enhance their value as a national heritage.

H. The impact of policies and programs on fragile and critical habitats will be considered and appropriate action will be taken to prevent unnecessary damage to such lands.

I. Federal policies and programs will not contribute to inappropriate use of hazard lands or inappropriate siting of hazardous processes.

J. Local, regional and provincial concerns, plans and zoning will be considered, and appropriate action will be taken to ensure that the federal influence on land and local environments has a positive impact.

For further information, contact:
Lands Directorate
Environment Canada
Ottawa, Ontario K1A 0E7

# APPENDIX P

# APPENDIX P

## ADVICE RECEIVED BY THE TASK FORCE

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## ADVICE RECEIVED BY THE TASK FORCE

### General Comments

Present overall policies seem to be to keep things going to maintain the status quo, but the status quo changes anyway - subsidy cut backs occur etc., - so then what?

There is need for a framework. You can move the walls within the framework.

Our major problem is the lack of will to follow through. Maine does, New Brunswick doesn't.

How to change; get principles in place, then there's something against which to test a request or conflict.

A desirable goal would be land supporting its owners and a self-supporting Province.

Don't do anything irreversible. Preserve the quality of the land.

Don't destroy options. We need somebody who is concerned about the future availability of land for the rest of us.

There should be pressure incentives for Government managers to increase revenue.

We have no ownership ethic. It should be at least to maintain the value of the land. The landowner is custodian for a period of time only.

Government is on a "Rights" kick. There is very little talk of "Responsibilities".

Irving's land rule - never sell land.

Why should the citizen who wants his freedom be a burden on his fellow citizens?

People are getting tired of people not doing their fair share.

Politicians have a deep rooted respect for private ownership.

There is need for a hierarchy of public good.

Your report should be sexy, interesting and irrefutable.

## ECONOMIC POLICIES

The entire economy, except for some elements of the manufacturing sector, depends ultimately on proper use of land and its resources. It is critical to future fiscal stability of the entire province. People have to get off their butts and needle, cajole, legislate, etc.

Equal distribution of costs and benefits is important.

Government expenditures are 40% of G.P.P.

If planting costs are $150 per acre, economists say put the money in the bank, but resource management is different - it has a longer perspective.

The Province approves Municipal budgets (it is the only one to do so) but keeps no record of the total costs of operating the non-incorporated areas.

Land is an asset. If we transfer land between Departments for $1.00 it does not show as an asset.

There is interest subsidy for loans for Agriculture and Fisheries but not for manufacturing.

The private sector does not respond to opportunities as well as it could.

Remember, what we maximize in Charlotte County, we may take away from Saint John.

Source: Advice received by the Task Force.

## SOCIAL & EMPLOYMENT POLICIES

Socially desirable things change from time to time.

We are subsidizing "the poverty syndrome".

.... incremental poverty for the Province.

Increase of social benefits means loss of individual freedoms.

People with the least money are forced outside (Municipalities) and have to spend more (in the long term).

Provide incentives to pull people back into communities.

Quality employment does not have to be high technology.

The Extension Services are designed as service functions.

Maximizing net value-added is not the best measure of social benefit to people of New Brunswick.

Distributed social benefits - the Boisetown Mill is essential socially to the area but is uneconomic.

If we have a "social policy" in the family farm, why don't we have one in forestry?

Source: Advice received by the Task Force.

## PLANNING & LAND USE CONTROLS

The Saint John Regional Plan instigated by Municipal Affairs became just an extra job, to other Government departments, not a co-ordinated planning exercise.

There is no planner or representative of the Department of Municipal Affairs on the Provincial Planning Committee although Paul Horncastle, from Municipal Affairs acts as its Secretary.

Building permits should not be given outside municipal boundaries.

Problems result from cottages becoming houses and requiring services.

Economic optimization is monolithic and is exactly what people fear about land use planning.

We are not planning land use on Crown land.

Control lines exist along 49% of arterial roads, with controls averaging 162 m wide and maximum of 183 m (600 ft.). This amounts to 774 km (481 miles) and an area of 7,600 hectares (19,000 acres) under control.

A 2,000 mile strip around the coast is controlled under the Quarriable Substances Act.

Source: Advice received by the Task Force.

## TAXATION

Unmanaged land should be taxed higher than managed land. There are currently disincentives to management.

Land should be taxed at its market value. Rebates can then be used as incentives.

Taxes should be on income, not wealth.

If you are going to have a free market it must be adequately taxed to avoid the establishment of baronies of land.

There is too much attention to buildings rather than land.

Low taxes on slums encourage the continued use of slums.

We need tax incentives for productivity to balance welfare incentives for inactivity.

The return on our property taxes is lowest in all of Canada (by 40 - 50%). The $50 million residential tax credit would have balanced the budget over the last several years.

Assessment rates on forest land were set in 1967. Changes were proposed in 1976 but were rejected. There have been no changes since.

City dwellers pay two sets of taxes.

Changes in taxation change the economic size of a mineral deposit.

Source: Advice received by the Task Force.

## LOCAL GOVERNMENT

How do we get decisions made locally? People do not want local government until there is a problem.

Many conflicts develop at local level but have to be solved in Fredericton because no means exist to handle them at the local level.

Outlying residents are often compelled to make a village when not ready, because of lack of control on outside areas.

Absence of local government has meant absence of looking at the costs, and has provided tremendous incentive to living outside the serviced municipal areas.

Municipalities are complaining about urban sprawl but providing serviced lots does not solve the problem.

Sprawl is inseparable from the problem of local government.

Water and sewerage is being provided in the North-East of the Province but people are still building outside those areas.

C.M.H.C. Housing program encouraged urban sprawl. The Rural and Native housing program provides low interest loans for housing outside municipalities.

Stimulation grants are under-utilized tools.

About 20 kilometers of new subdivision streets are built each year at a capital cost of $26,000 per kilometer, with a maintenance cost of $2,000/km/year and a reseal cost of $10,000 km/decade.

Ten years ago, Local Service Districts received $1 million per annum. Now they receive about $4.5 million per annum plus $1.5 million for capital funds.

Thirty-four arenas have been built over the past ten years but now local governments cannot afford oprations and maintenance.

Cities cannot run deficits so why should Governments in rural areas?

Source: Advice received by the Task Force.

## FORESTRY

Saying you cannot afford to manage the wood supply because it would be too expensive and would not sell is the same as saying we should not grow crops or improve the land because it would cost more than wild foods.

If you can get every fourth woodlot managed or protected we can get 500,000 cunits.

Demand for hardwood now is comparable to that for softwood 20 years ago.

D.N.R.'s recreation program is oriented to residents.

Trained resource managers become resource miners to meet the economic need for managing the economy.

There are no schools to train forestry machine operators.

Today in blueberries vs. trees, the cost/benefit ratio is not really the issue. Is it politics?

The U.N.B. woodlot is 60 acres. Over 30 years it has produced 1,800 cords or one cord per acre per year. The clearcut alternative would be 450 cords or ¼ cord per acre per year.

A woodlot owner had a company make an estimate of his forest. They estimated 16 cords of logs, pulp and stud. The owner took out 42 cords of all types. Two and one half times as much.

Irving needs one million acres for all his mills but owns more.

There is a New Brunswick Forest Research Advisory Committee in which Government, the Universities and Industry participates. There are eleven or twelve technical sub-committees.

What happened to rail transportation? Why use trucks to transport wood?

Who is looking at management alternatives if budworm spraying is stopped for example (for whatever reason)? Nobody, it seems.

Source: Advice received by the Task Force.

## TOURISM

New Brunswick is the least known of the Atlantic Provinces.

There is need for a park system plan. What role should parks play in the recreational needs of the Province? Needs resolution.

Provincial Parks are developed for New Brunswickers who pay for them. Provincial Parks cover 0.088% of the Province. There are 59 parks. Mt. Carleton is 4,300 acres, all the rest combined represent 14,100 acres.

There is no N.B. Tourism Association. This is the only province without one. An example of lethargy?

King's Landing has an educational objective. Its marketing budget is $5,000 for an $8 million investment.

A marketing problem? King's Landing captures only 7% of passing tourism traffic.

One cannot prospect in Mt. Carleton Park. If it is going to be managed for forestry so why can't we mine it?

Source: Advice received by the Task Force.

## AGRICULTURE

If it is fertile it should be protected.

If the family farm is worth preserving then we want a mechanism to make it viable.

The Land Management Company idea - is it extendable to agriculture?

Agriculture strategy is substantially a social one with production complementary but perhaps secondary.

Agricultural development is being limited by lack of processing facilities.

Grain should be rotated with spuds but more land is needed and soil conservation measures must be taken. This has been recognized for years but little has been done.

The need for changes to come from farmers.

Drainage of land may be of benefit to the land. It may also be a spin-off from highways.

To better control agricultural land uses, a group could ask for designation as an agricultural area (using a procedure now under consideration).

Source: Advice received by the Task Force.

## INFORMATION

No man knows anything until he learns it for himself.

There should be a free flow of information about land and its potential.

Information is power.

There is need for a Resource Information Distribution Centre and Digital Mapping System.

A central agency for mapping is required. Some agency should be responsible for quality control.

In mapping we must ask the question - "Are we doing the right thing"?

There is need for a better geoscientific data base. There is a new $10 million Research and Development Agreement (70% Federal and 30% N.B.).

D.N.R.'s main role is protection and enforcement. Forest Extension puts Education first and technical forestry second.

We do not know the costs of urban sprawl because we have not collected the data. They are "untold costs".

Source: Advice received by the Task Force.

## GOVERNMENT COORDINATION

Land use management has to be co-ordinated.

D.N.R. has a Land Management Advisory Committee to grant permits for camp grounds. If we use an inter-departmental committee to decide those things, how much more important is it for the big decision?

A Secretariat should replace several Committees. It could chair the Spednic Wilderness Park Committee.

Deputies are concerned about conflicts and lack of information.

There must be a Deputy to support the Land Use Office or whatever. Without a Deputy backing you, you will not get anywhere.

Regional Industrial Development Strategies are being prepared.

Sector Strategies are being prepared for food, fish, oil and gas, high technology, metal works, pulp and paper (eight companies), etc.

There is scope for co-ordinated approach to Ministerial exemptions.

Source: Advice received by the Task Force.

# APPENDIX Q

# APPENDIX Q

## FREDERICTON LAND FILL PROPOSAL

Page

1. City of Fredericton Sanitary Land Fill Debate "The City's View" Q 1

Q1

## THE CITY OF FREDERICTON

# SANITARY LANDFILL PROPOSAL

# FLANAGAN ROAD

## INTRODUCTION

The City of Fredericton faces a serious problem related to the future disposal of garbage. The City's Vanier Landfill site is over capacity at present and suffers a number of operational difficulties, consequently a new landfill site is required.

The City has been undertaking a search for a new sanitary landfill site since 1968 without successfully locating a new site. In 1981, however, Council selected a site located on Flanagan Road as its possible new landfill site. The site offers the best cross-section of location and operational characteristics which would ensure a successful sanitary landfill operation.

The approval of the site is now in the hands of the Minister of the Environment (the Honourable Eric Kipping) who is in the process of analyzing various impact studies done for the site as well as the results of public hearings on the matter. The Flanagan Road site has been strongly opposed by residents of New Maryland, primarily those of Castle Acres and Springwater Place, and it would appear that citizens of Fredericton are somewhat indifferent to the critical nature of the problem.

If the Municipality fails to find a new landfill site it may result in extremely high costs for the disposal of garbage and the continued use of the unsatisfactory Vanier Landfill site. Lack of a landfill site will seriously hamper the Municipality's long term ability to dispose of garbage produced within the Municipal boundaries of Fredericton.

The information contained in this flyer is being provided to the residents of Fredericton to inform them of the nature of the issues which are currently before the Minister of the Environment. The City's Flanagan Road site, which Council believes is a suitable site for landfill purposes, may not receive proper political consideration unless citizens of this City express their concern to the Provincial decision makers.

In reviewing this flyer we invite citizens to inform themselves of the issue and concern themselves with the future of waste disposal in the Municipality.

# DEPARTMENT OF ENVIRONMENT GUIDELINE CRITERIA FOR THE OPERATION OF SANITARY LAND FILL SITES

## I. SITE SELECTION

| ITEM | CRITERIA | FLANAGAN ROAD SITE |
|---|---|---|
| 1. Minimum surface area of land required | 4 hectares (10 acres) or whatever space required for a minimum life of 10 years using the criterion that approximately 1.5 hectare-meters (10 acre-feet) are required per 10,000 service population per year. | Site is 100 acres in size and 60 acres are to be used for landfill. |
| 2. Minimum population required to warrant the establishment of a disposal site. | 1,000 | Landfill will serve 45,000 + persons. |
| | 15 kilometers | Site is within 15 kilometers of major sources of refuse. |
| 3. Maximum haul distance where refuse collection service is not available. | Silty sand to silty clay loam preferred for the overburden soil | Clayey to silty clayey tills, average, average 7 metres in thickness and are reasonably uniform throughout the site. No granular soils are found. |
| 4. Recommended soil and bedrock characterization | Unfractured silt stones or clay shales preferred for the underlying bedrock | The underlying bedrock has a gently undulating surface; and is composed of an alternating sequence of red silt stones and sand stones and interbedded grey shales and sand stones. |
| 5. Minimum distance from the nearest dwelling and/or developing residential areas | 1.5 kilometer<br>NOTE: A closer distance may be considered if the standards of sanitary landfill are fully met. | Site 60 metres from nearest home in Fredericton and 1,000 metres from nearest New Maryland Subdivision. Site is to meet all standards of a Sanitary Landfill. |
| 6. Minimum distance from the nearest body of water | ½ kilometer<br>NOTE: This distance could vary if specific sources of ground or surface water have to be protected. | Baker Brook is within 100 metres of the site. The Brook is to be relocated and protected from pollution sources. |
| 7. Allowable depth of refuse for ground water protection | A 1 metre buffer of in situ soil must be kept between the high water level in the ground or bedrock, and the bottom of the first lift of refuse in situations where soil conditions permit.<br>NOTE: In certain types of soil or bedrock, artificial means of protecting the ground water must be provided. | Soil depth is sufficient to protect ground water sources. |
| 8. Minimum distance from highways and main roads | 150 metres if the site is screened.<br>300 metres or more if the site is open depending on the nature of the location. | Site is screened by tree cover but is within 60 metres of Flanagan Road. |

## II. SITE OPERATION AND MAINTENANCE:

| | | |
|---|---|---|
| 1. Recommended operating hours and days | 8 to 10 hours a day and 5 to 6 days a week. | Site will operate from 9:00 a.m. to 5:00 p.m. - 5 days a week. |
| 2. Site access requirements | Limited to operating hours.<br>A gate shall be provided and locked at closing time. | Access will be controlled permitting commercial vehicles only. A refuse transfer station will be established at the Vanier site for the public. |
| 3. Site limitations to accepting certain types of wastes | Hazardous, chemical, and liquid wastes are not to be disposed of on the site unless authorized by the Department of the Environment under special provisions. | Hazardous chemical and liquid wastes not to be accepted. |
| 4. Storage requirements for derelict automobiles and white goods. | Separate areas for the storage of recoverable scrap shall be provided. | No scrap automobiles are to be accepted. |
| 5. Daily cover requirements. | A 15 - cm soil cover shall be placed on all exposed solid wastes at the end of each day for disposal sites with a service population of 5000 and over. For smaller rural sites, covering of the wastes shall be practised at regular intervals as established by local authorities. | Cover will meet criteria i.e. 15 cm. daily soil cover. |
| 6. Final cover requirements | A one-half meter final cover shall be placed over the completed areas of the landfill. | Final cover will be .5 metres. |
| 7. Air quality requirements. | Open burning of the wastes shall be prohibited at all times unless special permits are issued by authorities. | No burning to be permitted. |
| 8. Fire hazard requirements. | A 15 metre firebreak shall be provided between active disposal areas and any vegetation growth. | A fire break of at least 15 m. will be provided around the site. |
| 9. Litter control requirements | Wire fences with mesh opening not exceeding 7 cm and a minimum height of 1.2 metre shall be erected at strategic locations around the site. | Appropriate litter control measures will be undertaken including fencing where necessary. |
| 10. On-site supervision requirements. | In most cases, the disposal site shall be attended during the time the site is open. | Site will be supervised by City Staff during working hours. |
| 11. On-site equipment requirements. | Permanent on-site equipment required along with a building to house the equipment and personnel for facilities operated to sanitary landfill standards.<br>Equipment shall be retained at regular intervals varying from once a week to once a month depending on the need and size of the disposal site for facilities which are not operated to sanitary landfill standards. | Site will be staffed and equipped by City. Equipment and operators will meet all requirements of Department of the Environment. |
| 12. Surface water drainage requirements. | Surface water shall not drain into or through the waste disposal areas of the site. Ditching and drainage works shall be provided as necessary. | Appropriate drainage control to be undertaken as required by Department of the Environment. |
| 13. Access and on-site road requirements. | Access and on-site roads shall be passable year round and guide signs shall be posted to indicate the direction of the disposal site and location of dumping areas. | Doak and Flanagan Road are all year roads. |

# METHODS OF OPERATION

The sanitary landfill project proposed by the City is aimed at managing the disposal of garbage generated within the municipality as well as the neighboring community of New Maryland over a fifteen year period. It is estimated that the amount of refuse requiring disposal during this period will average 89 metric tonnes (98 tons) each week day.

The type of material accepted at the site would be municipal refuse such as paper, wood, metal, glass, food wastes, yard trimmings, plastics, rubber and other debris. The city has stated that toxic and hazardous waste materials would not be allowed entry to the site. In addition, only operators approved by the municipality would be allowed to use the facility.

Members of the public who wish to dispose of waste material would be required to use a "refuse transfer station" located at the existing landfill on the Vanier Highway. A refuse transfer station provides large containers which are regularly removed and transported by truck to the operating sanitary landfill site for final disposal of the waste.

The new sanitary landfill would operate 8 hours a day, Monday through Friday, during day time periods only. Estimated traffic to the site would consist of 50 to 60 vehicles per day (covered and compactor trucks), moving to the site via the Vanier Highway and the Doak Road.

Although the overall site would cover 43 hectares (108 acres), the area actively used for refuse disposal would be approximately 23 hectares (60 acres). The forested area between the North Branch of the Baker Brook and Flanagan Road would serve as a buffer zone to obscure view of the site from this road. The assessment report states that the site would not be visible from the Springwater Place and Castle Acres Subdivisions, providing tree cover is maintained along its western and southern limits.

An all-weather access road would be constructed into the site from Flanagan Road. A surface drainage ditch would be constructed along the western limit of the site to divert "uncontaminated" surface runoff water away from the landfill and into the North and Main branches of Baker Brook. A series of other collection ditches would convey surface runoff from the operating refuse disposal area into sedimentation ponds, to allow for removal of suspended solids prior to discharge of this runoff into Baker Brook. These collection ditches would be located along the eastern limit of the site.

The central concept of a "sanitary" landfill is the daily covering of deposited refuse with soil to minimize potential odours, litter, fires, smoke, scavenging by pests and other problems caused by exposed garbage. The assessment report emphasizes that this procedure is essential for successful operation of the proposed project.

The development plan proposed by the City of Fredericton would use the trench sanitary landfill method. Each trench or "cell", containing approximately 38 days production of refuse, would be approximately 100 metres (300 ft.) in length, 15 metres (50 ft.) bottom width, and 3.5 metres (10 ft.) deep measured from present ground surface.

Cells would be developed in sequence from north to south within the active refuse disposal area. Refuse would be pushed by a bulldozer into the cell, compacted by a second dozer to approximately 1 metre (3.3 ft.) depth, and then covered on a daily basis with 0.15 metres (6 inches) of local clay till. Each completed cell would then be covered with 2 metres (6.6 ft.) of the surficial material excavated during initial construction of the cell. This final cover material would then be compacted.

The cells would be excavated on an "elective" basis depending primarily upon weather conditions. Dry periods are most favourable for excavation and handling of the silt and clay soils which are characteristic of the area proposed for the project. However, during wet weather conditions, stock-piles of well drained "borrow" material would be required for daily covering of refuse and construction of access roads. This soil would have to be excavated elsewhere and transported to the site for storage and use as needed.

The assessment report notes that the active refuse disposal area would be minimized by clearing the site only as required to develop new cells and by reclamation procedures. Reclamation would be carried out as sections of the landfill were completed and would include revegetation and planting of shrubs.

The proposed landfill would be operated by a work force of four persons (site supervisor, gateman, and two equipment operators). Equipment at the site would include two bulldozers on a full time basis, and an excavator for use as required during construction of the cells. The study points out that dust would be generated by the on-site operations, and could be minimized by application of dust control agents along haul roads within the site.

## Specific Environmental Control Measures

As mentioned above, the daily compacting and covering of refuse with soil is central to the municipality's operational plan for proper environmental control at the proposed site. In additon, the City has made specific proposals for surface water drainage management and control of leachate liquids. The assessment report reviews these aspects of the operational plan in detail and also considers the question of possible gas emissions from decomposing buried material.

With regard to surface water, the report expresses some concern about the ability of the proposed drainage systems to operate effectively during storm conditions. It recommends that consideration be given to the use of overflow type sedimentation ponds, rather than the type which has been proposed, if storm runoff conditions are considered, the tentative plan to construct a major diversion of the Baker Brook during the seventh year of the landfill's operational life also requires further careful study, according to the report.

Since groundwater protection is a key issue in any landfill assessment program, the study team looked carefully at the methods proposed for leachate control. Leachate is the technical term used to describe water which can collect in the cells underneath a landfill, and be contaminated by the deposited refuse. The report notes that the City's operational plan calls for constructing the bottom of each refuse cell on a downslope, with a gravel-filled drain at the low end to enhance the collection of any leachate.

Monitoring the volume and analysing the contents of such liquids would take place by using drain pipes to the surface installed in each cell. These "leachate collection wells" would also be used to pump out leachate for treatment if required. The City has proposed recycling of leachate through the refuse cell as a means of treatment. The Final assessment report states that extensive on-site studies would be required to establish the effectiveness, practicality and design basis for the proposed re-circulation system.

Since groundwater protection is a well recognized concern, the assessment report contains an extensive discussion of hydrogeology in the area and detailed recommendations on groundwater monitoring.

The report also recommends additional monitoring programs for surface water discharges from the proposed sedimentation ponds. Monthly sampling of these discharges is advised and water quality monitoring at three separate locations along the Baker Brook is recommended at least twice a year.

With regard to potential build-up of explosive gases, the report points out that decomposing refuse underground can lead to the production of gases such as methane and carbon dioxide. Because the nature of the clay soils at the proposed site could prevent natural release of such gases after final compaction, the report recommends monitoring of gases as the initial cells are developed, should the development proceed. The results of such early testing would then make it possible to determine whether an overall gas venting system was required.

* Excerpt from Environmental and Socio Economic Assessment of the Flanagan Road Landfill: Dept. of the Environment (summary).

## WHERE DO WE GO FROM HERE ?

**If you are concerned about the future of refuse disposal in the City of Fredericton and the impact it may have on taxes in the City, express your written or verbal opinion in support of the Flanagan Road Landfill site to**

1. Premier Richard Hatfield, P. O. Box 6000
   Centennial Building, Fredericton - 453-2144
2. The Honourable Eric Kipping, 364 Argyle Street
   Fredericton - 453-2634
3. The Honourable Ed G. Allen, P. O. Box 6000
   Centennial Building, Fredericton - 453-2510
4. Mr. David Bishop, P. O. Box 62 McLaren Crescent
   Nackawic, N.B. E0H 1P0 - 575-2115
5. The Honourable L. I. Hull, P. O. Box 6000
   Centennial Building, Fredericton - 453-2313
6. The Honourable H. B. Smith, P. O. Box 6000
   Centennial Building, Fredericton - 453-2558

**For your convenience you can clip and send the following:**

To: The Honourable Eric Kipping
Minister of the Environment
Department of the Environment
364 Argyle Street
Fredericton, N.B.

I support the Flanagan Road Landfill site and request favourable consideration from the Department of the Environment.

Name:______________________________
Address:____________________________
___________________________________

# APPENDIX R

# "QUOTATIONS"

STUDY HOW A SOCIETY USES ITS LAND AND YOU CAN COME TO A PRETTY RELIABLE CONCLUSIONS AS TO WHAT ITS FUTURE WILL BE

E.F. SHUMACHER
SMALL IS BEAUTIFUL

"OUR LAND IS MORE VALUABLE THAN YOUR MONEY. IT WILL LAST FOREVER. IT WILL NOT PERISH AS LONG AS THE SUN SHINES AND THE WATER FLOWS AND THROUGH ALL THE YEARS IT WILL GIVE LIFE TO MEN AND BEASTS. IT WAS PUT THERE BY THE GREAT SPIRIT AND WE CANNOT SELL IT BECAUSE IT DOES NOT BELONG TO US."

CROWFOOT

BLACKFOOT CONFEDERACY 1877

YOU NEVER MISS THE WATER TILL THE WELL RUNS DRY

ANONYMOUS

NATURES LAWS AFFIRM INSTEAD OF PROHIBITING. IF YOU VIOLATE HER LAWS YOU ARE YOUR OWN PROSECUTING ATTOURNEY, JUDGE, JURY AND HANGMAN

LUTHER BURBANK

ISSUES ARE SO INTERLOCKED THAT TO CONSIDER THE PROBLEMS OF ONE SECTOR, OBLIVIOUS TO THOSE OF ANOTHER, IS BUT TO COURT DISASTER FOR THE WHOLE

GENERAL MACARTHUR

MANS WORST DIFFICULTIES BEGIN WHEN HE IS ABLE TO DO WHAT HE LIKES

THOMAS HUXLEY

LAND TENURE - A SYSTEM OF INTERPERSONAL AND INTERGROUP RELATIONSHIPS THROUGH WHICH MAN'S RELATIONSHIP WITH PART OF HIS ENVIRONMENT IS MEDIATED.

RON CROCOMBE

# LEST WE FORGET

"IN THIS COUNTRY WE HAVE BEEN MISLED BY OUR PLENTIFUL SUPPLY OF LAND INTO A FALSE PHILOSOPHY OF INEXHAUSTIBILITY. WE HAVE COME TO REGARD THE LAND ONLY AS A SOURCE OF IMMEDIATE WEALTH. WE HAVE FORGOTTEN THAT IT IS A FUNDAMENTAL HERITAGE BELONGING AS MUCH TO OUR CHILDREN'S CHILDREN AS TO US IN THE LITTLE TIME WE ARE PERMITTED TO REMAIN HERE ON EARTH."

QUOTE FROM 1938 SPEECH OF
HUGH HAMMOND BENNETT,
FOUNDER OF SCSA.

SOIL CONSERVATION SOCIETY OF
AMERICA.

That New Brunswick having started to recognize the importance of planning and developing the land as the means of laying the foundation for better social conditions will have the courage to apply these principles in a larger way to their whole provincial development. It will need courage because it will mean expenditure of money without any immediate return and without any immediate political advantage.

Thomas Adams.
The Busy East of Canada 1917.

This was what I prayed for: a plot of land not too large containing a garden, and near the house a fresh spring of water, and a bit of forest to complete it.

HORACE "Satires II" vi 1
(65-8 B.C.)

The guardian of the land . . . shall take therefrom only reasonable revenues, customs and services without distinction and waste of men or property. The guardian . . . shall keep up and maintain the houses, parks, fishponds, pools, mills and everything pertaining thereto, out of the issues of the same . . . .

MAGNA CARTA, 1215

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# APPENDIX S

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